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To:

The current Restricted Executive Council (REC) of ESCOM,

- Suvi Saarikallio, President <suvi.sarikallio@jyu.fi>
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- Andrea Schiavio, Past President <andrea.schiavio@york.ac.uk>
- Geoff Luck, Editor-in-Chief of Musicae Scientiae <geoff.luck@jyu.fi>
- Nicola Di Stefano, General Secretary <nicola.distefano@istc.cnr.it>
- Caroline Curwen, Treasurer <drccurwen@gmail.com>

other members of the current Executive Committee of ICMPC,

- Renee Timmers, Chair, ICMPC 16 Organizer <r.timmers@sheffield.ac.uk>
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and colleagues who previously organized conference hubs, expressed interest in doing so, or might help find future hub organizers:

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Graz, 28 May 2025

Dear colleagues,

As in the past, our 2027 conference will be a combination of triennial ESCOM conference and biennial ICMPC. It will attract hundreds of colleagues from all over the world. What format should we choose? Single location with added remote presentations? Multi-hub? Fully virtual?

The present letter is one of four related documents on this question. The other three are:

- My email of 5 May about ESCOM climate policy and its implications for the next conference, to the same list of recipients. I explained how a multi-hub conference could be organized, with opportunities for the diversification and expansion of our discipline.
- The attached unpublished statement of “ICMPC statement of aims and values” (draft of 5 July 2023) that the ICMPC Executive Committee prepared in 2023 but never published, with input from various colleagues in music perception and cognition.
- A new paper on issues surrounding multi-hub conferences (Parncutt, under review). Let me know if you would like to read it.

As a long-time ESCOM member (since the 1980s), past president (2015-2018), organizer of ICMPC15/ESCOM10 in 2018, and current member of the ICMPC executive committee, I am con-

cerned about the recently announced plan to hold ICMPC19/ESCOM13 in 2027 at a single location (Helsinki) with added remote presentations. In this document I address:

- disadvantages of single-location aviation-dependent academic conferences,
- benefits of a transition to more sustainable and inclusive alternatives,
- opportunities to lead and inspire other academic disciplines to do the same, and
- negative consequences of not responding constructively to this challenge.

A successful conference relies on the motivation and goodwill of the organizers. That is especially true when new conference formats are being developed. A discussion about how we might best respond to issues of sustainability and inclusion should not undermine that motivation and goodwill. I therefore ask colleagues to accept this letter in the spirit of constructive collaboration.

## **Joint statement**

The following one-paragraph statement is supported by the following colleagues: Mayumi Adachi, Imina Aliyeva, Ric Ashley, Isabel Cecilia Martínez, Clorinda Panebianco, Richard Parncutt, Barbara Tillmann, Renee Timmers.

The negative effects of global warming (e.g., droughts, floods, fires, heat waves, extreme weather) are gradually worsening, exacerbating disease, hunger, migration, and conflict. At the same time, the gap between rich and poor is widening; the Global South is suffering more than the North. The most affected regions are gradually becoming uninhabitable. Political and corporate responses are inadequate. Academics in all disciplines have a special responsibility, given our ability to evaluate academic work across disciplines. Apart from contributing academic content, we must urgently reduce our own emissions. Aviation represents more than half of the global warming impact of a typical university, if the radiative forcing index for aviation (roughly 2.7) is considered and all business and private flights of staff and students are included. It is no longer OK to invite or encourage hundreds of colleagues to fly across the world to a conference, each emitting in a few days the amount that an average human emits in a year. While remote presentations at a single-location conference are a helpful step, they do not address the core structural issue. Young researchers should not be expected to rely on high-carbon travel to advance their careers. Colleagues with limited financial means, including those from the Global South, should not be treated as second-class participants. In these ways, single-location conferences may contradict the climate policies or equity goals of our academic societies, universities, or countries. To our knowledge, the two most promising solutions are fully virtual and multi-hub conferences (cf. internal ESCOM and ICMPC guidelines). These options apply in particular to ICMPC/ESCOM in 2027. Our principled position on this issue goes beyond the next conference, drawing academic attention to issues of human responsibility and survival.

## **The Helsinki proposal**

The last meeting of the Restricted Executive Council (REC) of ESCOM discussed a single-location in-person conference in Helsinki with additional remote presentations. A closer look suggests that this “hybrid” format is neither sustainable nor inclusive. It would be the third high-carbon ICMPC

in a row, to which colleagues from all over the world are invited and encouraged to fly. In all three cases (Japan 2023, Brazil 2025, Finland 2027), the conference location will have been unnecessarily distant from the affiliations of most participants. Stroud and Feeley (2015) explained:

Significant reductions in GHG emissions can be achieved by optimizing meeting site selection. (...) Ideally, meeting locations would be chosen to minimize travel distances for targeted pools of attendees. (p. 403).

At the Japan conference, colleagues from both North America and Europe flew intercontinental. Soon, hundreds of North Americans will be flying to Brazil instead of remaining within North America, as they did for previous ICMPC/SMPCs. An ICMPC/ESCOM in Helsinki will mean that Europeans fly to the periphery of Europe instead of a central European location.

But specific conference locations are not the main problem. The main problem is the invitation to hundreds of colleagues to fly long distances. That makes relevant office holders (executives, planners, organizers) co-responsible for the emissions.

Quite possibly, a quiet majority of colleagues in our various societies will agree that the age of single-location in-person global conferences is over, when presented with the relevant facts. If those colleagues remain silent and we continue to ignore our emissions, it could be 2033 (the ICMPC/ESCOM after next) before the necessary changes are made. By then, flying could be more difficult or even impossible (too expensive, too dangerous, limited by global agreement). As academics, we should be pro-active, leading rather than following, foreseeing such problems and solving them before they arise.

## **The single-location in-person conference with remote presentations**

### *Sustainability*

Adding remote presentations to a single-location conference (“hybrid”) improves sustainability and inclusion. But by how much?

- Total conference emissions might be reduced by 10% relative to the same conference without remote presentations, as some participants present remotely rather than traveling (see Appendix 1). If the hybrid format encourages additional colleagues to participate who would not otherwise have done so (e.g., students or colleagues from the Global South), emissions per participant could fall by another 10% -- altogether roughly 20%.
- At the same time, locating the conference in Helsinki – on the periphery of Europe, with no European train connection – could increase emissions by 20% relative to a central European location with good train services, canceling the benefit of remote presentations by non-Europeans. Recall that most participants will be European (as at past European ICMPCs). The problem will be partly solved in 2030 with the new Rail Baltica link between Tallinn and Warsaw.
- But the biggest contribution to conference emissions would come from non-European participants – especially North Americans. Perhaps 90% of non-Europeans would fly and 10%

would present remotely. Our most important task is to reduce emissions from intercontinental flights. A reduction of 10% is too small.

To support and clarify these arguments, we would need emissions data from the ICMPCs in Japan and Brazil. To my knowledge, no such data are available. They would be very welcome! Appendix 1 presents preliminary estimates of virtual participation at single-location academic conferences.

*Comparison with ICMPC15/ESCOM10 (2018).* We estimated emissions at this multi-hub event as follows. For each participant, we took the direct distance as the crow flies between place of work (affiliation) and attended hub, and assumed only one mode of transport. At the registration desk in Graz, 178 participants indicated that they had mainly travelled by plane, 44 by train, 13 by car, and 9 by bus. We used European emission factors (EEA, 2014): 0.285 kg CO<sub>2</sub>e per person-kilometer for flying, 0.101 for driving a car, 0.068 for bus, and 0.014 for train. For other hubs, we assumed surface travel if the affiliation coincided with the hub's metropolitan area (Sydney, Montreal, or Buenos Aires) and air travel otherwise (so total emissions were slightly overestimated). The total distance traveled was 2.52m km; if all participants had traveled to Graz, the total would have been 5.95m km. Therefore, the multi-hub format reduced the total distance traveled by 58%. The corresponding reduction in emissions was (at least) 59%, from 1663 to 684 tonnes CO<sub>2</sub>e. (The reduction in emissions was greater than the reduction in distance, because people travelling shorter distances were less likely to fly.) On average, the multi-hub format reduced emissions by 2 tonnes CO<sub>2</sub>e per person, from 3.3 for the single-location format to 1.3 for multi-hub. Savings in emissions would have been greater if more Graz participants had taken a long train trip (Fois et al., 2016). I thank Jakob Mayer of the Wegener Centre for Climate and Global Change for these calculations.

*Radiative Forcing Index.* Aviation contributes roughly 2.5% to yearly global CO<sub>2</sub> emissions. The contribution to all global warming so far is about 4%, due to additional effects of water vapor, nitrogen oxides, soot, sulfate aerosols, and contrail-induced cirrus clouds (Klöwer et al., 2021). The *Radiative Forcing Index* (RFI) is the ratio of total radiative forcing to radiative forcing from emitted CO<sub>2</sub> alone (Lee et al., 2021). In an IPCC Special Report, Penner et al. (1999) proposed RFI=2.7 for aviation, explaining that “this index ranges from 2.2 to 3.4 for the year 2050 for various E- and F-type scenarios for subsonic aviation and technical options considered here” (p. 188). The 2.7 estimate was accepted by Fuglestad (2003, p. 325) and Lim et al. (2023). Lee et al. (2021, highlights) and Megill et al. (2024, abstract) reiterated the consensus opinion that non-CO<sub>2</sub> emissions are responsible for about 2/3 of total global warming from aviation (i.e., RFI=3).

*Harm caused by academic conferences.* Climate change is affecting millions and killing thousands. In future, it will affect billions and kill millions. A global temperature increase of 2°C could altogether cause one billion premature deaths (Parncutt, 2019). Every week, there is a new unprecedented disaster. As this document was being written, large areas of NSW Australia were under water, affecting housing, agriculture, and infrastructure. In recent years in North America, global warming has exacerbated floods, droughts, cyclones, sea level rise, heat waves, wildfires, and the spread of invasive species. Many can no longer afford insurance. Globally, 2024 saw the greatest ever global loss of forest to fire in one year, caused by combinations of drought, wind, and heat, each caused by global warming. Every year, Arctic and Antarctic sea-ice get smaller.

Büchs (2019) estimated that the universities of the world contribute 184m tonnes CO<sub>2</sub> to global warming each year, which is 0.5% of total global emissions (37bn tonnes CO<sub>2</sub>) – not considering RFI. Of that, academic conferences contribute 20-50%, or 0.1 to 0.25% (see Appendix 2). Here is an alternative calculation: There are roughly 15 million academics in the world, including doctoral students. The contribution to global warming of one economy-class return ticket from New York to Paris is 1.0t x RFI = 2.7tCO<sub>2</sub>e. (To estimate the global warming impact of flying in units of CO<sub>2</sub> equivalent, try [atmosfair.de](https://atmosfair.de), which assumes RFI=3 for aviation.) If, on average, academics attend 1.5 conferences per year, emitting roughly 2.7tCO<sub>2</sub>e each time, that's roughly 50 million tonnes CO<sub>2</sub> equivalent per year. Total global CO<sub>2</sub> emissions are 37 billion tonnes per year; when other greenhouse gases are included, 54 billion tCO<sub>2</sub>e ([ourworldindata.org/greenhouse-gas-emissions](https://ourworldindata.org/greenhouse-gas-emissions)). Therefore, academic conferences contribute 0.1% of total global warming impact.

If 0.1% does not seem like a lot, consider this:

- It is in addition to the emissions that academics already create in their everyday lives.
- If all humans have the same intrinsic value and rights, it is not emissions in a category (e.g., “China” or “steel production”) that count, but emissions per person. For academics who fly to conferences, yearly emissions per person are higher than for the average middle-class person in a rich country, which in turn is much higher than the global average per person.
- Of all categories of emissions (electricity, heat, land transport, manufacturing, construction, agriculture, industry, fugitive emissions, buildings, waste, land-use change, forestry, aviation, shipping, etc.; see [ourworldindata.org/emissions-by-sector](https://ourworldindata.org/emissions-by-sector)), many account for only a few percent of the total, yet all must be urgently reduced.

Academic flying is relatively easy to reduce, compared with other sources of greenhouse-gas emissions. Substantial reduction is possible without sacrificing academic quality. Outreach and cultural diversity can be improved, which improves social relevance, which in turn improves academic quality (Liao, 2011). These benefits are offered by both fully virtual and multi-hub conferences. From that perspective, emissions from academic conferences are *low-hanging fruit*.

*The need to fly less.* Aviation is growing. Total emissions could triple by 2050 (Owen et al., 2010). Aviation is also elitist: 2-4% of global population flew internationally in 2018, and 1% of world population emits 50% of CO<sub>2</sub> from commercial aviation (Gössling & Humpe, 2020). Recent improvements in the sustainability of aviation lagged behind growth (Owen et al., 2010). Biofuels and sustainable aviation fuel (SAF) will not solve the problem, given the enormous amounts required, of which so far only a small fraction has been manufactured and used. This strategy cannot stop the long-term global growth of aviation emissions (Stay Grounded, 2025). In any case, the aviation industry has a history of abandoning previously set emissions targets (Gayle, 2022; Symons & Graham-McLay, 2025). Apart from improving efficiency, which is still possible to a limited extent, the best solution is to reduce the demand for aviation (Bergero et al., 2023). Multi-hub and virtual conferences are one approach; another is a frequent-flyer levy or tax (Büchs & Mattioli, 2024).

## *Inclusion*

A traditional single-location conference excludes colleagues who cannot afford the total cost of registration, travel, and accommodation (Doğan et al., 2023). The “hybrid” format proposed for ICMPC/ESCOM in 2027 would allow anyone in the world to participate, but non-flyers would be second-class participants, missing out on the benefits of physical participation. Seen in that light, a hybrid conference is a form of colonialism. At the coming conference in Brazil, Brazilian colleagues will be included, but for the first and probably last time. At the same time, most of the Global South will be excluded. True inclusion means always including everyone.

## **Implications**

Both desiderata – sustainability and inclusion – can be radically improved by switching to either a fully virtual or a multi-hub conference format, or alternating between the two:

- A fully virtual conference is almost completely sustainable and almost completely inclusive. There is no face-to-face contact, but software solutions are being developed to improve the experience and efficiency of virtual conferences. I propose that this option can only be rejected by a committee if members are informed of recent advances in such software developments and the various advantages and disadvantages have been discussed.
- A multi-hub conference is much more sustainable and inclusive than a single-location conference – while at the same time maintaining constant face-to-face contact within hubs. The literature on multi-hub conferences is growing (Corneyllie et al., in press; Kremser et al., 2024; Parncutt et al., 2021; Parncutt, under review; Wenger et al., 2025). I propose that this option can only be rejected if those making the decision have studied the literature and discussed the issues with colleagues who are willing to organize hubs.

*Avoiding harm.* Research should not harm people, animals, or the natural environment. Academic conferences are part of research. One approach is to “encourage greater substantive reflection and engagement with ethically important moments in research and empower researchers with more transparent, accountable, and responsive ways of engaging with emergent ethical issues” (Hammett et al., 2022). Regarding harms caused by aviation in tourism, Higham et al. (2019; abstract) explained:

Currently we rely on individual decisions to forego air travel as the means of reducing these high-risk emissions. ... encouraging voluntary responses to such risks cannot succeed because of the nature of human reason and the structure of the problem itself ... Participation in the high-carbon air travel regime is a social convention, and transition from social conventions requires coordination among players ... it is our moral duty to promote coordinated collective action.

The “Ethical principles of psychologists and code of conduct” of the American Psychological Association (APA) (last amended January 1, 2017) do not mention global warming, climate change, flying, or conferences. But they do include the principle of *beneficence and nonmaleficence*:

Psychologists strive to benefit those with whom they work and take care to do no harm. In their professional actions, psychologists seek to safeguard the welfare and rights of those

with whom they interact professionally and other affected persons, and the welfare of animal subjects of research. When conflicts occur among psychologists' obligations or concerns, they attempt to resolve these conflicts in a responsible fashion that avoids or minimizes harm. Because psychologists' scientific and professional judgments and actions may affect the lives of others, they are alert to and guard against personal, financial, social, organizational, or political factors that might lead to misuse of their influence.

That's what we should be doing when planning conferences, given the well-known magnitude and effects of the carbon emissions. I could not find any evidence that APA has made that connection. Instead, APA members have expressed concern about psychological aspects of, and approaches to, global warming (<https://www.apa.org/about/policy/climate-change-crisis>). But the 2018 New York City and 2019 San Francisco meetings of the American *Psychiatric* Association produced 19,819 and 21,456 metric tons of CO<sub>2</sub>e respectively (Wortzel et al., 2021). That caused roughly 5 and 6 future premature deaths respectively in connection with global warming according to the 1000-tonne rule (Parncutt, 2019).

*Our responsibility.* Given these considerations – combined with the proven ability of the global music perception and cognition community to realize both virtual and multi-hub conferences, having tested both in the past – we are now ethically and legally responsible for the consequences if we fail to address this problem. I propose that it is neither ethically nor legally OK:

- to invite or encourage hundreds of colleagues to fly intercontinental, each emitting in a few days the amount that an average human emits in a year;
- to expect young researchers to contribute to global warming in exchange for an academic career; or
- to promote a conference format that treats colleagues with limited financial means, including those from the Global South, as second-class participants.

These claims were always true, but before covid we had no practical solution (or did not realize we had one). With the rise of internet-based videoconferencing, we no longer have an excuse. Our current situation obliges us to choose among available solutions, of which two are most promising: virtual and multi-hub. We can draw upon the growing academic literature on these conference formats and the experience of colleagues who have implemented them.

*Academic climate leadership.* It has been clear for many years that universities must urgently reduce air travel (Glover et al., 2017). Helmers et al. (2021) noted that

Universities, as innovation drivers in science and technology worldwide, should be leading the Great Transformation towards a carbon-neutral society and many have indeed picked up the challenge. However, only a small number of universities worldwide are collecting and publishing their carbon footprints.

In a study of the emissions of higher education in Finland, Kiehle et al., (2023) remarked that

Finland is aiming at reaching carbon neutrality already by 2035 ... Following that goal, a working group of Finnish universities (UNIFI) published several theses for a sustainable fu-

ture for higher education institutions in Finland, including the recommendation to act as forerunners and realise carbon neutrality in 2030 ... The UNIFI theses highlight the exceptional role institutions of higher education can take toward carbon neutrality as trailblazers and pioneers. The consensus in the academic world seems to be that institutions of higher education have the responsibility to become forerunners for climate-friendly practices and should aim at sustainable practices on their premises and in their operations.

But universities have been slow to cut down on flying. In a study carried out at Australian National University, Boyle et al. (2024) noted that

A frequent theme ... was the inherent complexity and goal conflicts that culminate in an inability to create change to air travel practices within universities. Air travel is considered fundamental to university cultures and norms that prioritise *internationalisation* and *networking* as a measure of success and career advancement. *Building networks, seeking funding and attending conferences* are all seen as essential to progress in an academic career, and for university rankings. University rankings are also linked to the ability and need to *attract international students*, and these contradictions and goal conflicts were raised by the majority of the participants. Interviewees described a need to implement a collective and cultural approach to change (my italics).

These are lame excuses. The points in italics can arguably be achieved better at a virtual or multi-hub conference than at a single-location conference. *Internationalization* works better when inclusion and outreach are better. *Networking* is more successful face-to-face, but also when there are more and more diverse people to network with; the same applies to *seeking funding*. A virtual or multi-hub conference is more likely to *attract international students* than a single-location conference, for financial reasons. Those who are indirectly excluded from single-location conferences cannot do any of these things.

Meanwhile, academia risks being overtaken by business. On 27 May 2025, a news report appeared with the title “150 companies support ambitious EU climate target for 2040”:

Around 150 European companies and investors are calling for greenhouse gas emissions in the EU to be reduced by at least 90 percent by 2040. “A robust climate target and the decarbonization of our economies will strengthen the EU's resilience to shocks, improve energy security and competitiveness,” they write in an open letter addressed to the European Commission, members of the European Parliament and EU heads of state and government. The signatories go on to demand that the 90 percent reduction should be seen as a minimum target and not as an upper limit for ambition. “Emissions reduction should be given absolute priority, with measures to increase decarbonization in all economic sectors, accelerate the transition to clean energy, and increase energy efficiency.” Signatories include SAP, the Otto Group, and Allianz. (marketscreener.com)

Why are we academics persisting with single-location conferences? Apart from natural conservatism or resistance to change, we like the social contacts and interesting locations. Motivation of that kind has positive spinoffs for research – but socializing and traveling are not the *main aims* of conferences. The *main aim* is to promote high-quality research in specialist



disciplines. That does not require face-to-face contact, although it certainly helps. Academic quality founded on international networking, group creativity, and social dynamics can be achieved in different virtual and semi-virtual ways. Every conference format has its pros and cons.

In addressing these issues, every academic discipline has the opportunity to take the lead, inspiring other disciplines to follow. In the area of music perception and cognition, we can contribute to global climate action while at the same time benefiting from improved conference content (from greater cultural diversity) and the attention we attract from other academic disciplines (as they try to copy us). A general reduction in emissions from academic conferences could put new pressure on politicians to stop and reverse the growth of aviation emissions.

We need to change attitudes or cognitive norms, which depend on the collective action of all stakeholders (Tseng et al., 2022). We need structural reforms that radically cut emissions while treating all people equally, in every way. Dolšák and Prakash (2022) explained:

From a structuralist perspective, aviation emissions require policy changes because they reflect regulatory and business failures to address the climate crisis. By itself, individual actions will not significantly reduce emissions. Moreover, focusing on personal (agentic) action might allow governments and firms to disavow their role in the climate crisis.

Hypothesis: Experts on music perception and cognition care more than the average academic about less-rich colleagues, or the future of our children. Evidence: Both psychologists (Harton & Lyons, 2003) and musicians (Babiloni et al., 2012) tend to score high on empathy. The practical skills and tasks of musicians and psychologists often involve empathy, so we may have more practice implementing empathy than other disciplines. There is also research linking music with environmentalism and climate activism (Fleming & Levitin, 2024; Prior, 2022). Many of us have expertise in audio technologies used by alternative conference formats.

Virtual and multi-hub conferences allow academics from less-rich countries to be included on the same level – provided the hubs of a multi-hub conference have equal status, and the daily program is equally convenient, with each hub sending and receiving conference presentations in real time. If these constraints are met (Parncutt, under review), the quality of research as a whole will improve as research becomes more socially relevant (Henry et al., 2021). More broadly, the inclusion of colleagues from the Global South will contribute positively to global sustainable development alongside the UN's Sustainable Development Goals.

## **Requested action**

In the hope that we can together find a constructive solution, I respectfully ask REC:

1. To revise the plan for ICMPC/ESCOM in 2027 so that no participant is motivated to take a long flight and no young researcher is expected to fly.
2. To ensure that colleagues in the Global South can participate in the same way, and on the same level, as colleagues from the Global North.

Neither of these criteria is fulfilled by a single-location conference – regardless of additional remote presentations. Please therefore consult the growing literature on fully virtual and multi-hub conferences, and creatively consider new possibilities or combinations.

If the multi-hub option is chosen, the best location for a European hub is central Europe, to minimize traveling distance and the need to fly. If hubs are equal, the conference chair need not live in the same city as a hub; she or he will be in frequent contact with all hubs. In North America, the best hub location is similarly central and 8 hours behind the European hub. The Mountain time-zone is ideal, but Pacific or Central would also work well. Eastern Australia is another promising hub location, being exactly 8 hours from both central Europe and the North American Mountain time-zone, in the Northern summer.

An ideal global program has three equal timeslots of 8 hours, each divided into 4 hours' work and 4 hours' rest. Each hub interacts in real time during two of the three daily 4-hour work slots, the other material being available later as videos. Any number of additional hubs are possible, provided the time differences are manageable. Ideally, all inhabited continents are represented, with two or three in Asia (Central/South Asia, East Asia, Middle East).

In addition, I request that REC:

3. Estimate emissions before, during, and after every future ESCOM conference: before, when deciding on format; during, to ensure data are complete; and after, when publishing.
4. Evaluate DEI (diversity, equity, inclusion) at every conference, comparing qualitative descriptions and quantitative measures across conferences (e.g., # participants in different cultural groups by continent or region), and separating in-person and virtual participants.
5. Evaluate the format of every conference as a step toward optimizing sustainability and DEI within ESCOM, publishing the evaluation.
6. Forward the evaluation documents to related academic disciplines (e.g., musicology, psychology). Offer to collaborate in the planning of sustainable, inclusive conferences (cf. last sentence of ESCOM climate policy, Appendix 3).
7. Add these points to existing ESCOM climate policy (see our homepage and Appendix 3), while still following the existing text (as adopted by REC in 2019).

Should REC decide, in spite of these arguments, to proceed with a single-location conference with added remote presentations, I have two additional requests:

8. In addition to regular registration, require that flying participants pay a carbon offset to the conference, based on the best current scientific literature on the social cost of carbon. The value chosen should correspond to a global-warming limit between 1.5 and 2°C. Here's how to calculate the offset amount: (distance as the crow flies between affiliation and conference location in km) x (2, for return flight) x (0.00015 tonne CO<sub>2</sub> per km; cf. Ritchie, 2024) x (social cost of carbon = €200 per tonne CO<sub>2</sub>e emitted; cf. Aldy et al., 2021; Masson-Delmotte et al., 2019; Rennert, et al., 2022) x (Radiative Forcing Index for aviation = 2.7). For a participant from New York and a conference in Helsinki, the offset would be 6600 km x 2 x 0.00015 tonne/km x 200 €/tonne x 2.7 = €1069. Those without affiliation would use

their home address. Many colleagues would be traveling for multiple purposes and argue for a reduction on that basis; a quick solution would be to divide the total by 2 for everyone and insist that all who fly pay that amount regardless of their situation. Some colleagues would argue that this fee discriminates against people who live farther from the conference location; remind them that the damage must in any case be compensated (it won't disappear if we ignore it), and discrimination against the Global South is worse. Of course, offer the alternative option of a virtual presentation. Split the proceeds among appropriate charities that most efficiently and reliably promote environmental conservation and human and animal rights in the long term, and publicly document the process.

9. Remind participants that they are responsible for their own carbon emissions and the harm they cause to natural environments, humans, and non-human animals. The conference organizers cannot be held responsible. Consistent with that, do not encourage physical participation except from those in the local region who would not fly or those taking long train or bus trips. Encourage people to choose rationally between in-person and virtual presentation, taking sustainability into account.

## **Avoiding inappropriate procedures and arguments**

REC may try to resolve these issues democratically. But democracy has its own special problems:

- Democracy only works if those affected by a decision are represented. The REC does not include younger colleagues (whom we expect to fly in exchange for career benefits) or colleagues from financially disadvantaged countries (those who cannot afford our conferences). Nor does it include future people whose quality of life is being undermined by global warming. This document is an attempt to change that.
- Human rights issues have absolute quality that cannot be overridden by majority opinion (although interpretation and balancing of rights can indeed involve democratic and legal deliberation). The rights that climate change is infringing include life, quality of life, clean water, and freedom from poverty. "No state, group, or person has the right to deprive anyone of the rights and freedoms outlined in the Universal Declaration of Human Rights" (UDHR, 1948, § 30). A democratic majority cannot reject asylum seekers if that violates international obligations (1951 Refugee Convention). The principle of non-refoulement prohibits states from returning refugees to a country where their life or freedom would be threatened – even if a majority disagrees. See Dworkin (1977); Rawls (1993).
- Democratic processes thrive on compromise, but compromises can be problematic. Human rights are an example. The shift from a single-location conference to fully virtual or multi-hub is comparable to jumping across a crevasse: jumping halfway will not work.

Democracy depends on comprehensible justifications. When justifying a choice of conference format, we should be wary of problematic excuses. For example:

- "Many other disciplines are doing the same." The disciplines that are still organizing single-location conferences – during a global climate crisis, unprecedented in human experience – are like a group of speeding cars, each driver blaming the others. The police enforce the

law regardless of how many people are breaking it. In comparable historical cases, when people thought “If others are doing it, it must be OK”, consequences were catastrophic.

- “The option of remote presentation makes the conference sustainable.” Tourism is not sustainable if travelers buy offsets, volunteer to support a community project, or employ a local guide (Kundi & Ernszt, 2024). No such strategy reliably or quickly removes CO<sub>2</sub> from the atmosphere. A conference to which hundreds of people fly is never “sustainable”.
- “We are aiming for 50% virtual presentations.” It would be great if it was true. But a multi-hub conference could do the same, and in the same way, but without treating remote presenters as second-class participants. Moreover, technical delays would be less likely at a multi-hub conference, because trained colleagues would support virtual presentations at both the transmitting and the receiving end. Single-location conferences can avoid this problem by insisting that remote presentations are recorded in advance – but that further reduces the spontaneity of remote presentations and exacerbates discrimination against remote presenters.

## Consequences of “business as usual”

If REC fails to appropriately change its 2027 conference proposal, several options are available to colleagues who care about Global-South integration and the future of young people, and see conference reform as a promising way to achieve those goals within our sphere of influence. I hope that none of the following will be necessary:

- A new survey of colleagues in music cognition across age, qualification, gender, cultural background, nationality. In surveys of ICMPC participants in 2018 and 2021, a majority favored formats than improve sustainability and inclusion. A new, comprehensive survey would be welcome if it does not further delay reform. In such a survey, participants should be free to express their knowledge and beliefs (avoid leading questions). Questions should not go beyond the experience and expertise of participants: people should not be asked to evaluate a conference format they have never experienced, or to evaluate technical options without relevant experience or qualification. For that reason, it may be better to implement an alternative conference format first and evaluate it later.
- Pressure from universities that are trying to achieve internally or externally imposed emission-reduction targets. Universities that publish such targets are motivated to support colleagues who want those targets actually achieved. On that basis, universities could pressure conference organizers to adopt more sustainable, inclusive formats.
- Submission of a complaint to a Finnish or EU equality or sustainability oversight body (Finnish Non-Discrimination Act, European Equality law, European Climate Law, Finland’s Climate Change Act). That could result in pressure from governmental organizations, perhaps coupled with relevant support. Most countries have climate goals and organizations that are responsible for the achievement of those goals; the same applies to the UN.
- Pressure from NGOs. *Stay Grounded* ([stay-grounded.org](http://stay-grounded.org)) is interested in creative, effective approaches to stopping and reversing the growth of aviation. They would welcome collab-

oration with conference organizers who are substantially reducing aviation and might inspire conferences in other areas to do the same. Many other NGOs are addressing climate.

- A boycott of conferences that create excessive emissions or discriminate against colleagues who cannot afford them. If resistance to reform continues, and given the overriding importance of defending human rights, a boycott could be a powerful tool. It could be combined with a shadow conference, organized at the same time as a high-carbon, more exclusive event. Any member of our community could organize a shadow conference.
- Legal action against colleagues responsible for planning exclusive high-carbon conferences. That should be a last resort, but given the human rights implications it can't be counted out. One possibility is an internal review (audit or operations inspection) under the Finnish Association Act (see also Finnish Auditing Act, Tilintarkastuslaki 1141/2015): "A member of the executive committee, an official of an association and an operations inspector shall be liable to compensate all damage they have in office either wilfully or negligently caused to the association" (§39). The financial value of climate damage caused by the planned 2027 conference is (total mass of CO<sub>2</sub> emissions) x (Radiative Forcing Index for aviation) x (social cost of carbon), which is roughly 600 tonnes CO<sub>2</sub> x 2.7 x 200 = €324 000 – far more than the conference budget. That could be seen as "damage to the association" if global warming is a threat to human civilization, of which the association is a part. An economist might estimate the dollar value of the damage to the global academic discipline of music perception and cognition caused by systematically excluding students or colleagues from the Global South. The present text may serve as legal evidence that REC was warned. For further detail, see Appendix 4.

## Personal note

I have always enjoyed big international conferences. It's one of the highlights of being an academic. But ending colonialism and saving the climate for future generations have become more important.

The 2015 ESCOM conference in Manchester was the second-last I flew to. The last was the Conference on Interdisciplinary Musicology in Shanghai, November 2015, which I co-organized. I tried in vain to convince my Chinese colleagues that I could give my presentation remotely. I also participated in the International Seminar on Performance Science ISPS in Melbourne in 2019, being already there for private reasons (family). Meanwhile, I have attended all kinds of interesting European conferences by train or bus that I would otherwise have missed. What I did miss, for environmental reasons, was the ICMPCs in Japan and Brazil (2023 and 2025), and if current plans for 2027 go ahead, I will miss that too.

But there is no point complaining without offering a realistic alternative. I have been working since 2015 to clarify available options and solve logistical problems, and others have been doing the same (see literature list).

A fruitful, collegial discussion would be most welcome. In the past, we had such discussions in REC, but less so in the ICMPC executive committee, SMPC, and APSCOM. There, I sometimes encountered a mild form of denial: a refusal to discuss issues directly, as if they did not exist

(Wullenkord & Reese, 2021). A discussion will only succeed if we face the facts. Global warming is threatening humanity like nothing else in human history (Ripple et al., 2024), and overcoming colonialism is one of the great challenges and opportunities of our time. Bhargava (2013) considered “the epistemic injustice of colonialism ... cultural injustice that occurs when the concepts and categories by which a people understand themselves and their world is replaced or adversely affected by the concepts and categories of the colonizers” (p. 413). He also reminded us that “Western traditions can also benefit from ‘outsiders’ rejuvenating them” (p. 416).

Personally, I am facing a two-alternative forced choice. The easy solution would be to do nothing, ignoring the rights of future people, students, colleagues in less-rich countries, and my own two children. I could pretend not to know about the untold millions of premature deaths that 2°C of warming will cause. Given the magnitude of the problem, it seems more appropriate to annoy friends and colleagues by fighting for human rights.

Many colleagues will support the general direction of this document but avoid coming out, fearing indirect career consequences. That applies especially to younger researchers. In that way, this situation may be threatening our greatest academic good: freedom of speech. Immediate action is needed, if only to show younger colleagues that diverse political opinions are accepted independent of hiring or funding decisions – provided they do not contradict basic human rights. To colleagues with secure permanent positions let me say this: We must now finally solve this problem, and to do that, more of us will have to openly support constructive solutions.

Yours sincerely,

A handwritten signature in blue ink that reads "Richard Farnsworth". The signature is written in a cursive, slightly slanted style.

*Acknowledgements.* In addition to the above signatories, I am grateful to Blanka Bogunović, Andrea Schiavio, and John Sloboda for helpful comments. For repeated support during the past decade, I thank Irène Deliège (†), Diana Deutsch, David Huron, Scott Lipscomb, and Bruce Pennycook, among others. For helping organize ICMPC15/ESCOM10 in 2018, I thank Christine Beckett, Sabrina Sattmann, Nils Meyer-Kahlen, Emery Schubert, and Eldad Tsabary. Finally, I thank the Austrian federal government for recognizing the multi-hub conference idea in 2025 with a Sustainability Award worth €1000. If ESCOM organizes a multi-hub conference of the kind I have described in 2027, I will donate this money to a hub in the Global South.

## Appendix 1: Statistics on remote presentations at hybrid conferences

I recently sent the following request to ChatGPT: “Today, many international academic conferences are hybrid: The conference happens at a single physical location to which many people travel, mostly by air, from anywhere in the world. The conference also includes remote presentations from people who choose not to travel. Confining your search to the years 2022, 2023 and 2024, for how many of those conferences are data available on the number of remote presentations relative to the number of in-person (physically at the conference location) presentations? In those cases, list the name, date and location of the conferences, plus the reported numbers of in-person and remote presentations.”

Of course, ChatGPT is not reliable. But it saves time. Here is what ChatGPT replied (shortened):

Hybrid Academic Confs (2022–2024): Availability of Data on Virtual vs. In-Person Presentations

The adoption of hybrid formats in academic conferences has become increasingly prevalent in recent years, aiming to enhance accessibility and reduce environmental impact. However, comprehensive data on the number of remote presentations relative to in-person remain limited.

### Availability of Data

Among the numerous hybrid conferences held between 2022 and 2024, few have publicly disclosed detailed statistics on the number of remote versus in-person presentations. This scarcity of data underscores a gap in transparency and reporting practices within the academic community.

### Conferences with Available Data

The following conferences have provided specific information regarding the number of in-person and remote presentations:

#### 1. Bioinformatics Open Source Conference (BOSC)

2022 (Madison, WI & Online): Approximately 1,000 in-person attendees and 800 remote participants, indicating about 44% virtual attendance. Wikipedia

2023 (Lyon, France): Over 2,100 in-person attendees and around 900 online viewers, with remote participants comprising roughly 30% of the total audience.

2024 (Montreal, Canada): Around 200 in-person attendees, with additional remote participants; however, specific virtual attendance figures were not disclosed.

#### 2. Conference on Human Factors in Computing Systems (CHI)

2023 (Hamburg, Germany): 3,888 in-person attendees and 819 remote participants, indicating approximately 17% virtual attendance. Wikipedia

Conclusion: While hybrid conferences have become more common, detailed reporting on the distribution of remote versus in-person presentations is not widespread. The limited data available from conferences like BOSC and CHI highlight the need for more consistent and transparent reporting practices to better understand and evaluate the effectiveness and reach of hybrid conference models.

(chatgpt provided no references; sources were all conference homepages)

## Appendix 2. Contribution of aviation to academic emissions

(a) Many universities are now estimating their total carbon emissions in different categories, as a step toward steadily reducing them. That is a promising development, but there are problems:

- Emissions are often divided into Scope 1, 2, and 3, which many do not understand. Scope 1 emissions are from on-site combustion of fossil fuels. Scope 2 are from purchased energy (electricity, heating, cooling, etc.). Scope 3 are all other indirect emissions (purchased goods/services, travel, transportation, waste, construction, leasing. Scope 3 is often the biggest and hardest to measure. The total of the 3 scopes is what counts.
- Emissions are seldom adjusted for radiative forcing. For aviation RFI = 2.7.
- Private flights are not included under aviation, although universities actively encourage researchers to move to different countries, necessitating frequent private flights.
- Student commuting is generally omitted (Helmets et al., 2021). Again, universities actively promote international student mobility.

All four points can lead to underestimation of aviation emissions. Adjusting the data presented below, emissions from aviation typically represent more than half of all emissions caused by universities. Therefore, reducing aviation should be highest priority.

Schmidt (2022) investigated policies toward university air travel-related greenhouse-gas emissions (GHGE) of 44 US universities (doctoral institutions). Of those 44,

34% made no policy references to university air travel at all. In a majority of cases, no mention of air travel means no reference was made to recognizing university air travel as a contributor to institutional GHGE. This also means that there was no collecting, tracking or reporting of university air travel data. In some cases (e.g. Penn State), air travel is included in visualizations of GHGE sources, but no further consideration is evident. In other cases, commuter data or other Scope 3 emissions were considered, but not university air travel.

In summary, Schmidt noted that

Around a third of institutions simply have not considered university air travel in any visible way. A smaller but not insignificant number of institutions report many issues with collecting and tracking accurate data. In terms of impacting GHGE, a majority of institutions have recommended, but few have implemented, travel-related offset programs.

Possible reasons for a reluctance to consider aviation emissions include

- vested interests (most academics benefit personally from flying), and
- the difficulty of reducing aviation emissions by technical innovation, which makes abstinence the most realistic solution.

Global warming means future generations will do without things we take for granted today. The least we can do is cut down on our biggest sources of emissions. For academics, that's aviation.



## *Appendix 2b. Proportion of academic emissions from aviation*

For general background information on these issues, I sent the following request to ChatGPT on 19 May 2025: “What proportion of the total carbon emissions of a typical large university are from aviation? Be sure to include all flying (use of aviation), including all flying to academic conferences and all business, research or political meetings to which members of a university fly. Give some specific examples of universities and the breakdown of total emissions.”

Here is ChatGPT’s answer. To my knowledge, the cited figures are not adjusted for the radiative forcing of aviation, nor do they include private flights by university employees or student travel:

Aviation is a significant component of the carbon footprint of large research universities, particularly those with a global research profile and a high degree of international collaboration. Estimates vary by institution and methodology, but aviation can account for anywhere from 10% to over 50% of a university’s total greenhouse gas (GHG) emissions, depending largely on how “scope” categories are defined and whether air travel for academic, business, or research purposes is comprehensively accounted for.

### Typical Proportion of Aviation Emissions in University Carbon Footprints

#### 1. University of British Columbia (UBC), Canada

In UBC’s 2019 GHG emissions report, business-related air travel alone accounted for 63% of UBC’s total Scope 3 emissions, and about 22% of total university emissions (Scopes 1, 2, and 3 combined). When factoring in all air travel associated with research, academic conferences, and administrative travel, this number increases (UBC Sustainability Office, 2019).

#### 2. University of Cambridge, UK

A 2020 internal review found that air travel constituted approximately 20% of the university’s total emissions. Staff air travel for research and teaching-related activities was the dominant category (University of Cambridge, 2020). The actual number may be higher due to underreporting of non-reimbursed flights.

#### 3. ETH Zurich, Switzerland

ETH Zurich found that air travel accounted for 45% of the university’s total GHG emissions, making it the single largest emissions category. This includes international conferences, research fieldwork, and collaborations (ETH Sustainability, 2019).

#### 4. University of Oslo, Norway

For the year 2019, air travel accounted for around 30% of total GHG emissions, again being one of the dominant contributors after building energy use (Universitetet i Oslo, 2020).

#### 5. University of Melbourne, Australia

Business-related air travel was found to constitute 36% of the university’s carbon footprint, even though the university has extensive investments in on-campus energy efficiency (University of Melbourne, 2018).

### Why Aviation’s Share is So High

- Long-distance collaboration: Large universities engage in global research networks requiring frequent international travel.
- Frequent conference attendance: Academics are expected to attend and present at international conferences.
- Decentralized tracking: Many flights are funded through grants or third parties and not systematically accounted for in central emissions inventories.

- Scope 3 limitations: Some universities underreport Scope 3 emissions (which include business travel), underestimating the real impact of flying.

#### Key Takeaway

While the absolute numbers vary, aviation is consistently among the top three contributors to university emissions—often second only to energy use for buildings, and sometimes even greater in low-carbon electricity contexts. Thus, aviation emissions in large research universities typically make up 20%–50% of total emissions, especially when all travel associated with research, teaching, and administration is fully accounted for.

## Appendix 2c. Academic contribution to global warming

Another ChatGPT enquiry: “What proportion of all global greenhouse gas emissions (measured as radiative forcing or global warming impact) is from universities and academic research? What proportion of the latter is from aviation, in particular from flying to academic conferences? Base the calculation on global warming impact, which for aviation is 2.7 times greater than the effect of CO<sub>2</sub> alone (radiative forcing index).”

Reply:

### ◆ Step 1: Global GHG Emissions

As of the most recent global data (e.g., IPCC AR6 and UNEP Emissions Gap Report): Total global GHG emissions (including CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, etc.)  $\approx$  59 GtCO<sub>2</sub>-eq per year

### ◆ Step 2: GHG Emissions from Universities and Academic Research

A review (Le Tacon et al., 2022) and university-specific studies (e.g. ETH Zurich, University of Cambridge, University of California system) suggest that universities contribute approximately 0.5–1.0% of global GHG emissions. This includes buildings, commuting, labs, digital infrastructure, and travel. Total university-related emissions  $\approx$  0.3 to 0.6 GtCO<sub>2</sub>-eq/year

### ◆ Step 3: Proportion of University Emissions from Aviation (Conferences etc.)

Travel, particularly air travel, is often one of the largest contributors to a university’s emissions. Studies (e.g. Achten et al., 2013; Wynes & Donner, 2018; Klöwer et al., 2020) suggest: Aviation (primarily for conferences) accounts for 30–50% of a university's emissions, depending on the institution. Aviation emissions from academia  $\approx$  0.1 to 0.3 GtCO<sub>2</sub>-eq/year (raw CO<sub>2</sub>)

### ◆ Step 4: Apply Radiative Forcing Index (RFI)

To account for the full warming impact of aviation (not just CO<sub>2</sub>), we apply the RFI of  $\sim$ 2.7. Warming impact of academic flying  $\approx$  0.27 to 0.81 GtCO<sub>2</sub>-eq/year (GWI-adjusted)

### ◆ Final Estimates (Global Warming Impact)

| Category                       | GtCO <sub>2</sub> -eq/year | % of Global Total |
|--------------------------------|----------------------------|-------------------|
| Total Global Emissions         | $\sim$ 59                  | 100%              |
| Universities (total)           | 0.3–0.6                    | $\sim$ 0.5–1.0%   |
| University Aviation (adjusted) | 0.27–0.81                  | $\sim$ 0.5–1.4%   |

Note: The aviation number is embedded within the university total, not additive.

### ✓ Conclusion

Universities and academic research account for  $\sim$ 0.5–1% of total global GHG emissions.

Flying to academic conferences (after adjusting for radiative forcing) accounts for  $\sim$ 30–50% of that — about 0.15–0.5% of total global warming impact.

### **Appendix 3. ESCOM climate policy**

ESCOM climate policy was unanimously adopted by REC in 2019 and appears on the ESCOM homepage as follows:

We accept the main findings of current climate science and their urgent implications for academic conference culture, and are acting accordingly.

We therefore aim for ESCOM conferences to have a relatively low carbon footprint.

Our climate action also promotes the accessibility and cultural diversity of our events and improves the quality and quantity of our academic output by combining virtual and live participation, for example by holding multi-hub conferences.

Our green and inclusive conferencing project was nominated for the green impact national awards and has been chosen as the runner-up for the Environmental Improvement Award.

We are encouraging international colleagues to follow our lead.

This text aims for a “relatively low carbon footprint”. Given that a reduction of almost 100% is possible (virtual conference), this statement suggests a reduction of 30–70% relative to a traditional single-location conference with the same number of participants.

The text also states that “Our climate action also promotes the accessibility and cultural diversity of our events.” Adding virtual presentations to a single-location conference does indeed improve accessibility and cultural diversity, but in a colonialist way that indirectly discriminates. Remote participants have second-class status and miss out on many social and professional benefits of physical participation. Although officially included, they are effectively excluded.

Regarding the last sentence, we can hardly “encourage international colleagues” to invite hundreds of conference participants to fly long distances, putting young researchers under pressure to fly, or inviting colleagues from the Global South to accept second-class status.

## Appendix 4. Legal issues

A single-location conference with added remote presentations may be legally problematic.

### *Non-profit association law: Compliance with own purpose*

The objectives of ESCOM, according to its constitution, are

- 1) to further theoretical, experimental and applied research and teaching in the cognitive sciences of music,
- 2) to increase and disseminate knowledge and practical applications of music perception and cognition,
- 3) to encourage European and international cooperation within the field of research represented by the Society,
- 4) to promote interdisciplinary interactions between the cognitive sciences of music and neighboring disciplines in sciences, humanities, and practically oriented disciplines, and
- 5) to achieve these goals in accordance with accepted ethical principles including respect for human rights.

A single-location conference with added remote presentations may contradict objective 5) by emitting too much CO<sub>2</sub>e and pressuring young researchers to fly. It also impedes international cooperation with the Global South, contradicting point 3).

ESCOM is constituted in Finland. According to the Finnish Associations Act, “An association may be founded for the common realisation of a non-profit purpose. The purpose may not be contrary to law or proper behaviour.” Moreover, a court “may on the basis of an action brought by ... a member of the association declare the association terminated [or cautioned] ... if the association acts substantially against law or good practice [or] if the association acts substantially against the purpose defined for it in its rules.”

### *Administrative law: Misuse of public funding*

Our conferences are funded in part by government grants. Such funding should not be used in a way that contradicts national or European environmental or human rights legislation.

### *Climate law: National and European sustainability targets*

The EU aims for climate neutrality by 2050 (net-zero greenhouse gas emissions). That includes a *legally binding* target to reduce net emissions by at least 55% from 1990 levels by 2030. Finland’s Climate Act (423/2022) created a *legal obligation* for Finland to achieve carbon neutrality by 2035. Greenhouse gas emissions must be reduced by 60% by 2030, 80% by 2040 and 90-95% by 2050.

### *University sustainability targets*

Many public universities have set emissions targets. Such targets may not be legally binding or enforceable; public pressure or stakeholder expectations may be more important.

The Rector of my university announced in an email to all staff dated 19 May 2025:

The University of Graz has set itself the goal of achieving genuine climate neutrality by 2040. This means that at least 90 percent of emissions must be reduced. To be successful

on this path, we have to reduce them by at least two-thirds by 2030. We need your support to develop the right measures to achieve this goal.

By writing the present statement, I am providing my university with the support it requested. Along similar lines, the University of Helsinki declared in the document “Carbon-Neutral University of Helsinki by 2030: Roadmap” (accessed from helsinki.fi on 19 May 2025) that

The University of Helsinki will be carbon neutral by 2030. We are committed to responding to the global climate crisis in all our operations. Our climate action is founded on our shared values of truth, freedom and inclusivity. (p. 3)

The same document explains that air travel will be “significantly reduced” (p. 9). Given the large contribution of flying, conference organizers will likely come under pressure to reduce.

To achieve these various targets, it will be necessary for all users to reduce in all sectors. Larger reductions (approaching 90%) will be necessary in areas that can reduce more quickly or easily (“low hanging fruit”). Academic conferences fall in that category, given the existence of academically promising low-carbon conference formats.

Action is necessary now, not later. Targets will not be achieved if changes are postponed to the last minute. As Antoine de Saint-Exupéry apparently said: "A goal without a plan remains a wish."

#### *Human-rights law*

A single-location conference physically excludes scholars from the Global South, early-career researchers, and underfunded institutions that cannot afford travel, registration, and accommodation. Virtual inclusion can be seen as a form of exclusion if

- remote participants do not experience the same benefits as in-person participants, and
- realistic alternative conference formats that solve the problem are rejected.

The “hybrid” conference format proposed for ICMPC/ESCOM 2027 may discriminate indirectly under EU Charter of Fundamental Rights and Finland’s Non-Discrimination Act. Indirect discrimination does not arise from discriminatory intent. Instead, a seemingly neutral rule, criterion, or practice puts a particular group of people at a disadvantage compared to others.

#### *Criminal law*

Global warming is increasingly infringing the right to life. The following abstract (Levy & Patz, 2015) is relevant for any high-carbon project, including any single-location academic conference:

The environmental and health consequences of climate change, which disproportionately affect low-income countries and poor people in high-income countries, profoundly affect human rights and social justice. Environmental consequences include increased temperature, excess precipitation in some areas and droughts in others, extreme weather events, and increased sea level. These consequences adversely affect agricultural production, access to safe water, and worker productivity, and, by inundating land or making land uninhabitable and uncultivable, will force many people to become environmental refugees. Adverse health effects caused by climate change include heat-

related disorders, vector-borne diseases, foodborne and waterborne diseases, respiratory and allergic disorders, malnutrition, collective violence, and mental health problems. These environmental and health consequences threaten civil and political rights and economic, social, and cultural rights, including rights to life, access to safe food and water, health, security, shelter, and culture. On a national or local level, those people who are most vulnerable to the adverse environmental and health consequences of climate change include poor people, members of minority groups, women, children, older people, people with chronic diseases and disabilities, those residing in areas with a high prevalence of climate-related diseases, and workers exposed to extreme heat or increased weather variability. On a global level, there is much inequity, with low-income countries, which produce the least greenhouse gases (GHGs), being more adversely affected by climate change than high-income countries, which produce substantially higher amounts of GHGs yet are less immediately affected. In addition, low-income countries have far less capability to adapt to climate change than high-income countries. Adaptation and mitigation measures to address climate change needed to protect human society must also be planned to protect human rights, promote social justice, and avoid creating new problems or exacerbating existing problems for vulnerable populations.

This crucially important abstract does not directly mention climate mortality – arguably, the most important issue. Global warming will indirectly cause many millions (perhaps billions) of future premature deaths from starvation (Richards et al., 2023), humid heat (Freychet et al., 2022), and exacerbation of existing diseases (e.g., Yadav & Upadhyay, 2023; Yin et al., 2023), among many other mechanisms. Emitting excessive CO<sub>2</sub>e today is causing future human deaths.

The worst emitters are aware of this, but do not intend to kill – their intent is *oblique*. In criminal law, an oblique intent is a natural consequence of a voluntary act that is foreseen as such. Their crime, therefore, is one of mass manslaughter. If we knowingly participate, we share the guilt.

How much emitted CO<sub>2</sub>e causes one future premature death? Colleagues from different disciplines independently came to similar conclusions, with different methods and assumptions. Estimates include 4434t (Bressler, 2021); 7309t or 2542t (for victims with more or less financial resources, respectively; Bressler, 2025); 2000t (Nigel Howard, Australian chemist, personal communication, article currently under review); 1840t to 3680t (Nolt, 2011); and 3666t (Parncutt, 2019; Pearce & Parncutt, 2023).

For a conference of 400 people, in which the average participant emits 1.5 tonnes CO<sub>2</sub> or 4 tonnes CO<sub>2</sub>e (assuming RFI = 2.7), total emissions are 1600 tonnes CO<sub>2</sub>e. If 3000 tonnes CO<sub>2</sub>e are enough to kill a future person, such a conference causes half of one future death, or shortens the life of a future person by over 30 years. That is clearly unacceptable, even if the effect is tiny relative to total global emissions, which are causing roughly 10 million future deaths per year.

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