

Measures for Academic Air Travel Reduction

This catalogue of suggested measures is a work in progress. It is being maintained as part of a PhD thesis at ETH Zurich, Switzerland; for additions and remarks please contact agnes.kreil@usys.ethz.ch.

The catalogue **does not** comprise our recommendations, but rather reflects ongoing discussions held across a wide range of academic and non-academic communication channels during the last decade. The measures suggested therein are collected and organized without judgment. They span the full spectrum from individual to global, immediate to long-term, small to large, and incremental to transformative actions, and include also suggestions which have been problematized and contested.

Sources have been added as footnotes. Measures without sources have been taken from the ETH-internal discussions about an ongoing project to reduce our institution's air travel emissions.

VC = Virtual communication

Level 1: Individual researchers

Category	Measure
Monitoring	Voluntary carbon tracking ²⁹
More efficient flying	Combining multiple purposes into one trip (both for yourself and for people you invite) ^{5 13 22, 31}
Regionalizing	Prioritizing field trips with students to short distance destinations, or reducing field trips
Rules of thumb	Skipping every other international conference you would have gone to otherwise ³
Rules of thumb	Only flying for major, not poster, presentations
Rules of thumb	Only flying if the same journey on the ground takes more than a certain amount of hours ³⁰
Rules of thumb	Always reconsidering each trip ^{5 19 21, 30}
Rules of thumb	Stay as many days as the flight takes in hours
VC	Asking to speak virtually when invited to a conference/to give a guest lecture ^{7, 30}
Nudging and information	Group leaders acting as role models and reflecting with their group on travel cultures practices ³⁰

Level 2: Teams

Category	Measure
Enabling regulations	Reorganizing job interviews for positions on your team to require less flying ²⁸
Ground travel	Conference trains: travelling to/from a conference together and using that time for work ²⁴

More efficient flying	Making travel planning a priority and planning well in advance (for example so that people don't have to interrupt a stay abroad by coming home for one day because of bad/last-minute planning) ⁵
More efficient flying	Sending fewer people from one group/place to another for the same event
Tougher organization	Establishing clear pathways for decision making to reduce the need for co-presence ¹⁴
Tougher organization	Enforcing deadlines, better self-discipline, and reasonable work commitments so people don't need co-presence just to make sure they'll work on the project ¹⁴
VC	Using virtual communication and online collaboration tools (e.g. document sharing) for regular collaboration meetings, including informal networking ³⁰
VC	Planning "sprints" (periods of working on the same project from different places) for team motivation ³⁰

Level 3: Conference organizers

Category	Measures
Central locations	Holding conferences/meetings in places that minimize total travel based on expected participants' locations ^{4 5 11 18 19 22 23} and enhancing tools to help with this calculation process ¹⁴
Cluster conferencing	Holding conferences on the same topic consecutively in one region ²⁶ or holding extended weeks-long conferences ²⁶
Lower frequency	For periodic conferences: Scheduling conferences less often ²⁶ , perhaps biennially ^{3 18}
Nudging and information	Not listing flying as the first option in conference brochures
Offsetting	Offering conference participants the opportunity to easily offset their travel-related carbon emissions ²³
Regionalizing	Regional conferencing ^{6 28}
Regionalizing	Taking geography into account when selecting speakers, guest lecturers, and panel members ^{13 23, 30}
Regionalizing	Surcharge on conference fees for those who travelled long distances by air ^{22 23}
Regionalizing	For periodic conferences: alternating international with regional conferences ^{9 11 13}
VC	Offering virtual participation/presentation opportunities ^{2 3 4 30} (with special attention paid to networking ³⁰) or uploading/livestreaming content online ^{4 18 19} or full-on virtual conferencing ^{18 19 23 25 30}
VC	Multiple site conferences in which several conference hubs are connected using VC ^{18 22 23 25 27 30} , also possible in a wave across time zones ²⁷
Financial incentive	Reduced conference fee for participants travelling by train, bus or bicycle ³⁰

Level 4: Institutions/associations

Category	Measures
Enabling regulations	Reducing the number of members on advisory boards and academic commissions, especially international ones ¹

Enabling regulations	Removing finance policies that require always booking the cheapest travel option/flight ⁵ and instead requiring the lowest carbon travel connection ³¹
Enabling regulations	Allowing virtual presence of PhD (co-)examiners ^{30 33}
Enabling regulations	Rewarding people who reject invitations that require flying ⁵ , for example by having funding/hiring bodies value declinations ²⁶
Ground travel	Providing booking assistance for ground travel ³² , Training administrative staff on how to book ground travel
Ground travel	Institutional support for longer travel times ^{19 31} , such as extra days of leave/exemption from work appointments before/after an event ³² , support for care-taking at home ³² , or flexibility of teaching schedules ³²
Ground travel	Extra funding for ground travel (for example for first-class train tickets, or for extra overnight stays required for optimal train connections) ^{5 19 31} or rewards for using ground travel ¹⁹
Ground travel	Securing ground travel discounts for employees ^{32 34}
Financial incentives	Monetary reward for using ground travel, such as accommodation upgrades ³²
Financial incentives	Only funding economy class air travel ^{18 20}
Financial incentives	Monetary reward for reduction of air travel ¹⁸
Financial incentives	A pool where every group pays a certain amount of money toward the pool each year and then that money is redistributed based on how many emissions each group has reduced that year
Financial incentives	Internal emissions trading scheme
Financial incentives	Internal climate tax/fund ^{5 20 21}
Limits	CO ₂ budgets for each group ^{3 5 18}
Limits	Flight limits for certain types of occasions ⁵
Limits	Flight limit (absolute, or relative to previous flying levels) per person/unit and time ^{18 32 33}
Limits	Flight ban/limit within a certain travel radius ^{5 18} , domestically ^{31 32} , or to specific destinations ¹⁸
Monitoring	Transparency, comparison of flight records/emissions, peer pressure ^{1 33}
Monitoring	Mandatory carbon tracking and reporting ^{5 19 20 21, 31, 32, 34}
Nudging and information	Not having flying listed as the first option by your travel agency/guidelines ⁵
Nudging and information	Travel guidelines ^{21 34}
Nudging and information	Providing information and raising awareness about the carbon footprint of different transport options ³⁴
Nudging and information	Providing better information/tools for comparing travel options ¹⁸
Nudging and information	Introducing justification mechanisms that have to be completed when booking a trip (e.g. giving a reason for the trip) ^{5 17 19}
Nudging and information	University travel service should provide ground travel options and avoid suggesting non-direct flights ^{31 33} ; also present ground travel options more prominently than flight options ³³
VC	Developing (and funding the development of) enhanced VC technology ^{9 14 15 21} and communication channels/practices ¹⁹
VC	Social scientific research into how to do effective VC ^{9 15, 30}

VC	Make sure your collaboration partners particularly in poorer countries have or get access to high quality VC facilities
Other	Insitution-wide online platform for all members to share best practices and ideas on how to fly less ³⁰

Level 5: Groups of institutions

Category	Measures
Lobbying	Lobbying, e.g. for better train options ⁵ , more environmental constraints for airlines (such as fuel efficiency and biofuels) ³³ , a flight tax beyond the university ⁵ or to counter the expansion of airports ²⁸ , or even to “abolish capitalism” ³³

Level 6: Larger organizations and academia “as a whole”

Category	Measures
Changing requirements	Changing the ways grants ⁹ are allocated, for example by taking carbon emissions into account ²¹ , by limiting the number of conference presentations per researcher that can be included in a research proposal/CV ³⁰ or by not requiring proposals to include plans for co-presence/requiring only a kick-off and closing meeting, but not annual meetings
Financial incentives	Special financial support for online/hybrid events or series
Changing requirements	Including greenhouse gas emissions in university rankings and the assessment of individual excellence ⁸
Culture changes	Culture change ^{11 18 19 33} : reconsideration of values and processes
Culture changes	Changing from conference presentations to journal publications in fields where this is not yet the case ³³
Changing requirements	New performance norms ^{5 19 21, 33} , for example treating online and in-person lectures and the organisation of online and in-person conferences the same when it comes to hiring/promoting and funding procedures ³⁰
Changing requirements	Ethical code of conduct for emissions in general, perhaps in the style of ethics codes for animal experiments: “For scientific activities that require the emission of carbon, researchers should replace with less carbon-intensive activities, reduce the scope of the activity, and refine their research plan to maximize the scientific return for each unit of carbon emitted. Else, mitigate impact through offsetting.” ¹⁰
Offsetting	Making offsetting an acceptable use of grant money ¹⁰
Regionalizing	Valuing local and national research ³¹

Applicable at several levels

Category	Measures
Regionalizing	Not inviting people from far away in person, rather virtually ^{5 30}
Regionalizing	Doing less research far away (empowering local people to carry out the research) ^{5 12 14 28, 32}
Targets	Setting specific reduction targets ^{5 19 30 31 34} , perhaps even at a global level for all of academia (with uneven distribution to accommodate for low baselines and geographical remoteness) ²²

More efficient flying	Using more CO ₂ efficient airlines ³³ , reducing luggage weight on flights ³³ , choosing direct and daytime flights ³³
Offsetting	Offsetting ^{1 4 5 14 18, 31, 33, 34}
VC	Setting up (and updating ³¹) the necessary VC equipment ^{30 32} , an easy booking system for VC rooms ³⁰ , and training people to use it ³³ /providing IT support/making it known which options exist ²⁰
Limits	Reduced funding for conferences overall or when not presenting ³²

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