Academic mobility - Who gets to fly?

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FLIGHT

Decreased CO2-emissions in flight-intensive organisations: from data to practice


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Energimyndigheten

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What are the goals?

- Sweden supports the Paris agreement aiming to limit global warming to max 2˚C (preferably close to 1.5˚C).
- Carbon Law – half our emissions **every decade** from 2020 to 2050
  - Including emissions from flying.
  - Including emissions from KTH's flying
- KTH's president has decided we should reduce CO2 emissions in line with the Paris agreement

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Flying at KTH

- KTH flies a lot!
  - 2019: > 10 000 trips
  - 2019: > 7 000 tons of CO2 emissions
- Flying stands for 98% of emissions from travel
- KTH aims to reduce emissions from flying by 50% between 2020-2030
  - = 7% decrease per year
- Who should fly less?

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Academic flying

Human contacts/presentations are very important in Academia. I understand that we must reduce our emissions, but if we reduce the number of trips of our researchers, the impact of our research will significantly decrease. Trips are used to disseminate our research. This will increase the impact of our research. Trips are also used to create contacts, and these contacts will be used for common applications in Europe. Finally, trips are used to enable contacts with industrial partners abroad and other funders. The only way that I see to reduce emissions is in short trips, in which we could encourage the use of trains instead of planes. Maybe, to recommend to the professors to attend conferences more in Europe than in America/Asia/Oceania. Apart from that, it is difficult.

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Academic flying

It can be achieved in many ways. One way is a draconian decision that every employee has the right to a maximum of x flight trips per year. Another is for every division to decrease their travelling with x% every year. When it comes to costs, people should always consider the emissions and choose the mode of transport with least emission. [...] I could imagine additional policy instruments, for example transparency so that we would know which divisions/persons that contribute the most to climate change.

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Academic flying

"I don't know if this is the right place to say this, but there is kind of a culture of silence concerning climate issues and travel at KTH. Everyone knows about it, but it is considered unfitting to talk about it, even our head of division has directly said that we should not discuss the climate impact of our travel."

Eriksson, E., Pargman, D., Robèrt, M., & Laaksolahti, J. (2020). **On the necessity of flying and of not flying: Exploring how computer scientists reason about academic travel**. In *Proceedings of the 7th International Conference on ICT for Sustainability* (pp. 18-26).

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What do we do in FLIGHT?

- Access to large dataset on all flights from 2017 - onwards
- Understand how flying is distributed at KTH and answer questions such as "*who* flies *where* and *when*?"
- Aim to support and facilitate discussions at the division level about how to create change toward more sustainable travel practices
- Workshops with divisions @ KTH
- Make it possible to perceive, analyse, discuss, reflect and act upon this data and knowledge

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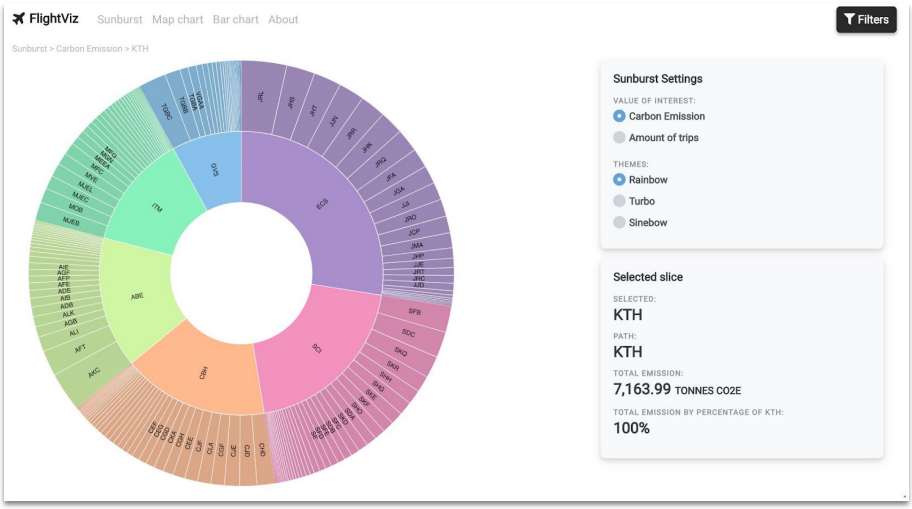
Top-down flight visualizations



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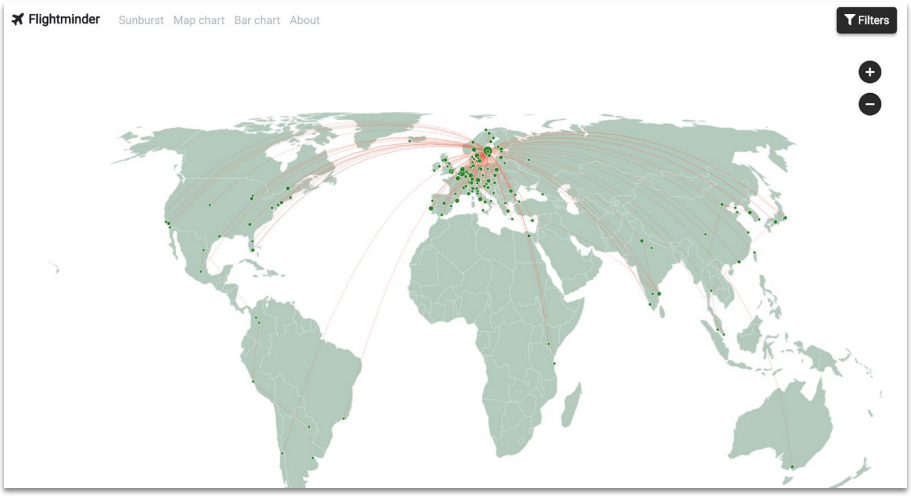
Top-down flight visualizations



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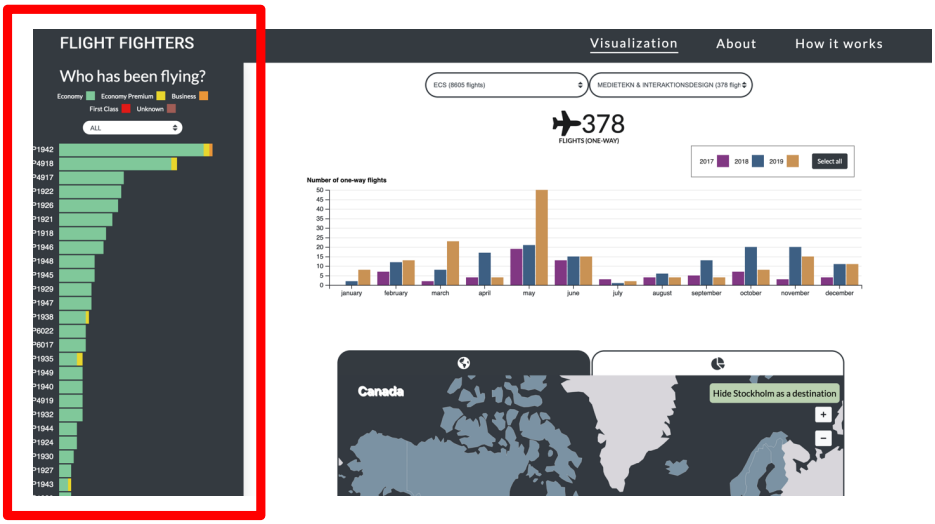
Top-down flight visualizations



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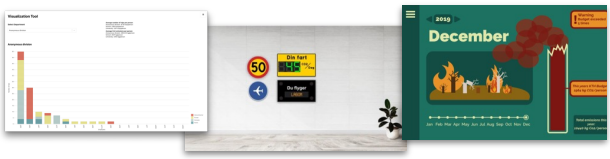
Visualizing flying in an organisation

Top-down

Middle-out



Bottom-up

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One conclusion: nobody knows how much their department/division flies

- Covid-19 has been a game changer
- Flying has been reduced during the pandemic, but this gives us no guarantee for reaching KTH's climate goals for 2020-2030
- Bottomline: nobody knows how their division flies
- …nor do we know how typical/untypical KTH is compared to other universities in Swedan and abroad

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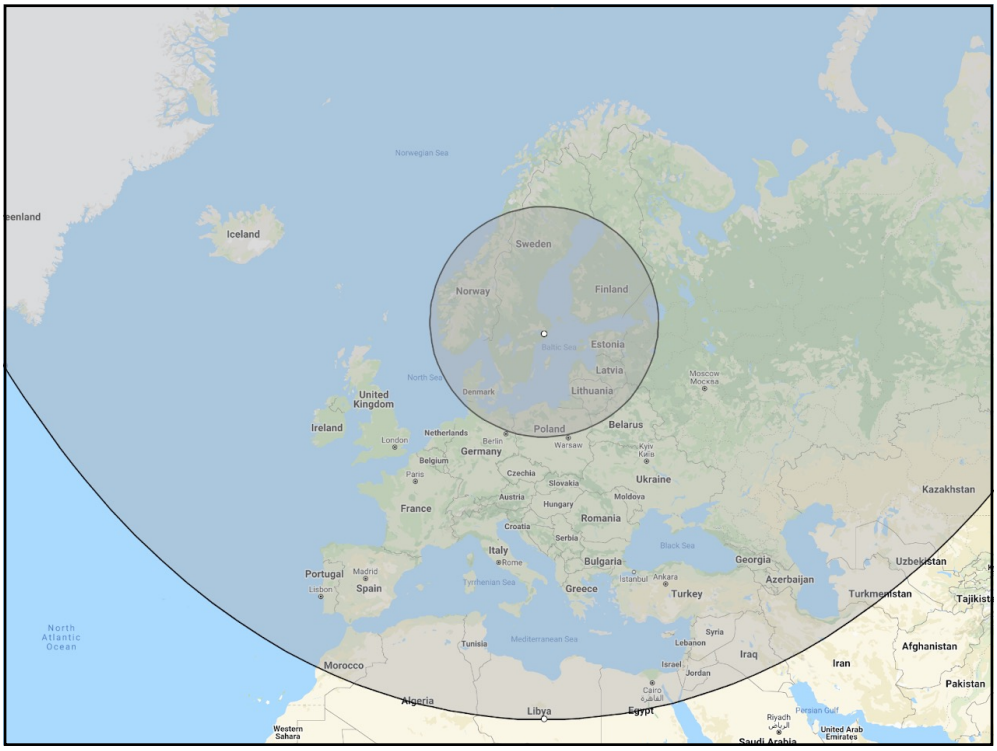
Norwegian Sea
Iceland
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North Sea
Denmark
United Kingdom
Ireland
London
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Berlin
Poland
Belarus
Warsaw
Germany
Belgium
Paris
Czechia
Slovakia
Ukraine
Kyiv
Moscow
Austria
Hungary
Moldova
France
Romania
Croatia
Serbia
Black Sea
Italy
Rome
Bulgaria
Georgia
Portugal
Madrid
Spain
Lisbon
Tyrrhenian Sea
Istanbul
Ankara
Greece
Turkey
Azerbaijan
Kazakhstan
Uzbekistan
Turkmenistan
Tajikistan
North Atlantic Ocean
Tunisia
Mediterranean Sea
Syria
Lebanon
Iraq
Afghanistan
Iran
Morocco
Israel
Jordan
Pakistan
Algeria
Libya
Egypt
Cairo
Persian Gulf
Riyadh
United Arab Emirates
Western Sahara

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KTH
VETENSKAP
OCH KONST
CO2 Conversion
2022-04-08
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Do we have the right data for the job?

- Travel Agency Data; focus on bookings and billings
- Annual installments (vs regular or live data throughout the year)
- The data is *not* structured for following up emissions reductions from business air travel at KTH
- 30% of all flying at KTH is made by unknown / anonymous individuals (not employed by KTH)
- Data about who flies where and when in an organisation is potentially sensitive and might raise uncomfortable questions
- Dilemma between the wish for privacy and the needs of the organisation to act in order to reach climate targets

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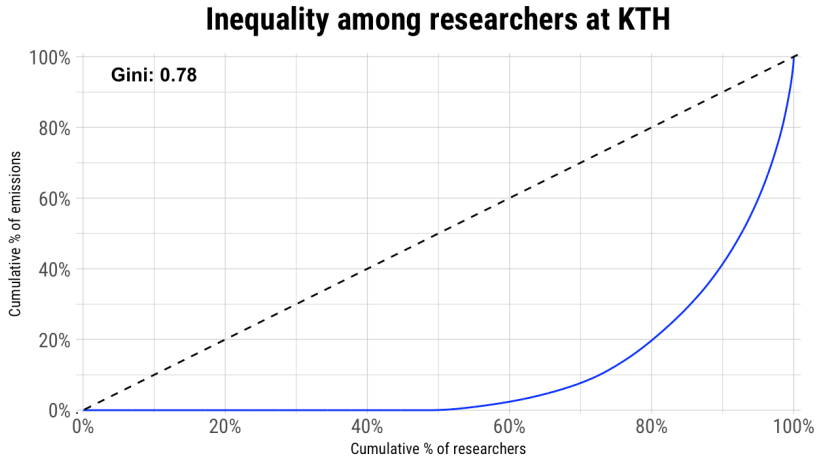
GINI-coefficient for the world economy = **0,65**
GINI-coefficient of flight emissions from KTH researchers = **0.78**



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Challenges

- There are ≈ 2600 researchers at KTH
- 20% of the researchers account for 80% of emissions from KTH's researchers
  - If these ≈ 500 researchers traveled in line with the average researcher, CO2 emissions from KTH researchers would be reduced by 75%

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Dealbreaker!

- We have presented a lot of data
- This data raises many questions
- It also raises many questions at departments that get to see data about their own flying
- It also awakens a lot of feelings
  - Including wanting to avoid thinking about the problem

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Questions

- Will academic practices change after Covid?
  …or will flying bounce back after Covid?
- Is there a correlation between flying and academic excellence?
- Do we (researchers) have to fly as part of our careers?
- What would a future low-fly academy look like?

- **On KTHs goals, ambitions and hopes**

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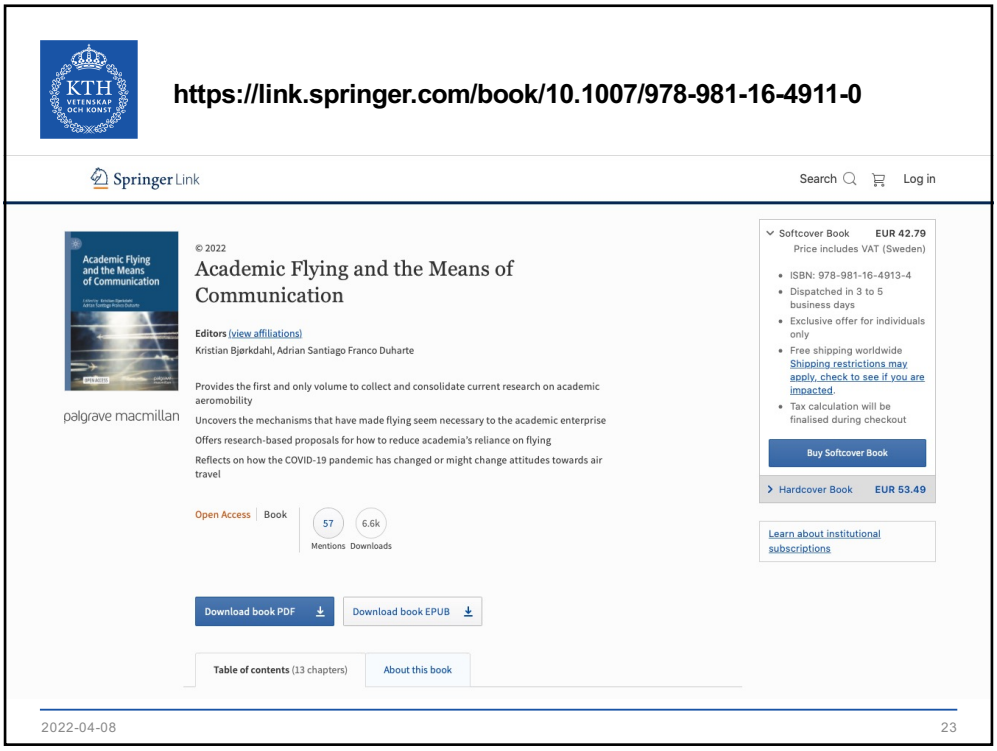
https://link.springer.com/book/10.1007/978-981-16-4911-0



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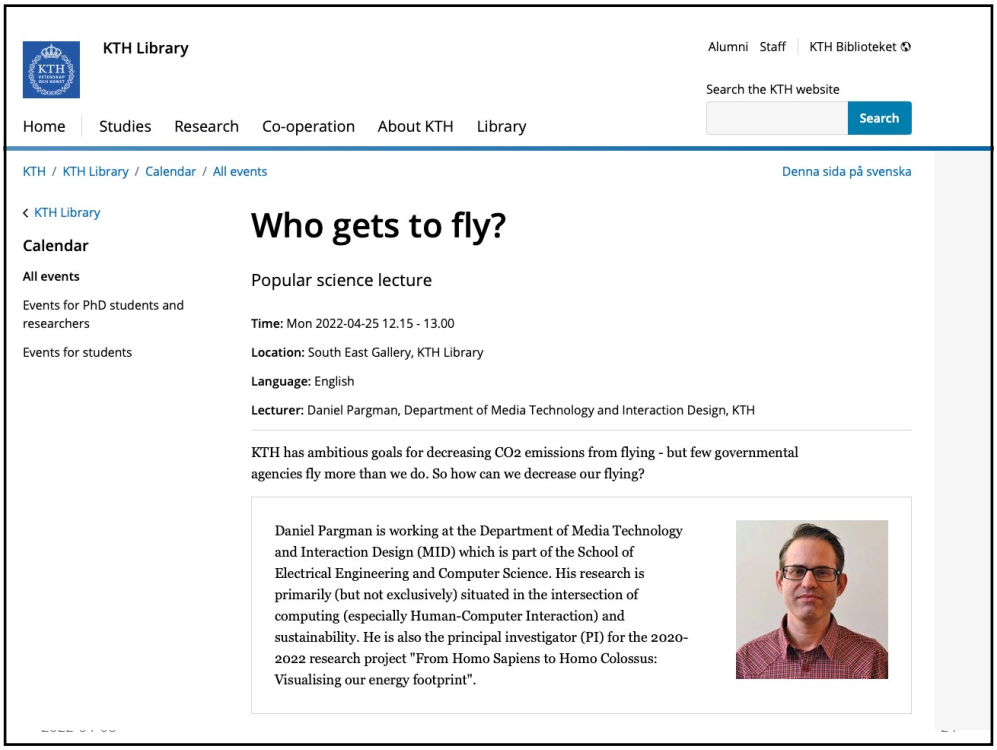

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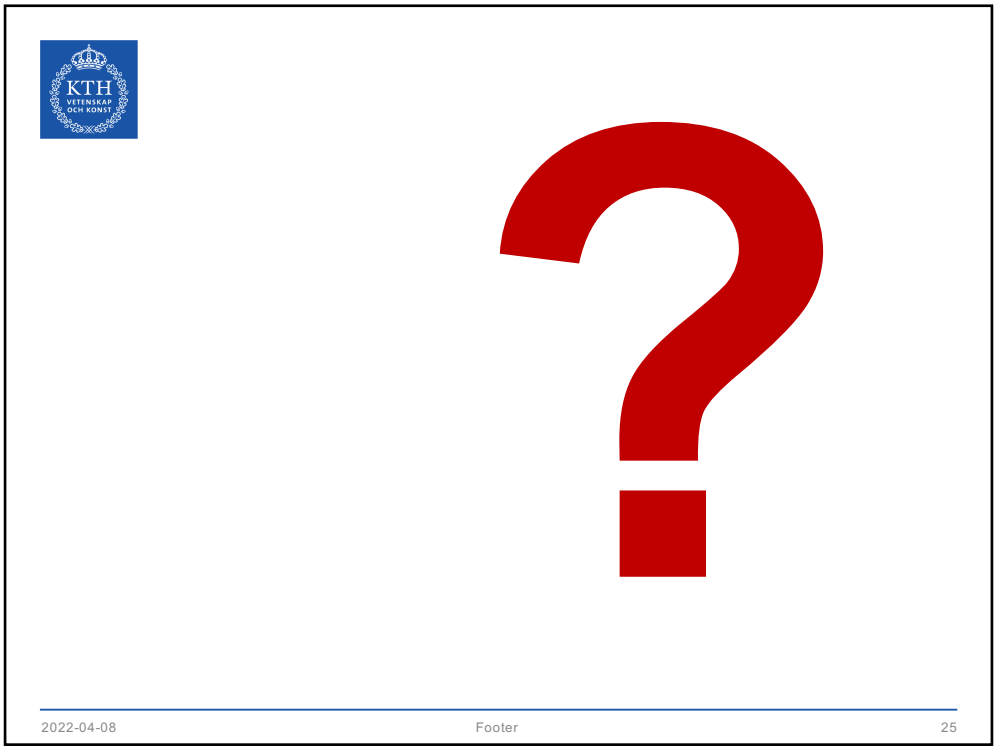
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Thank you!
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