



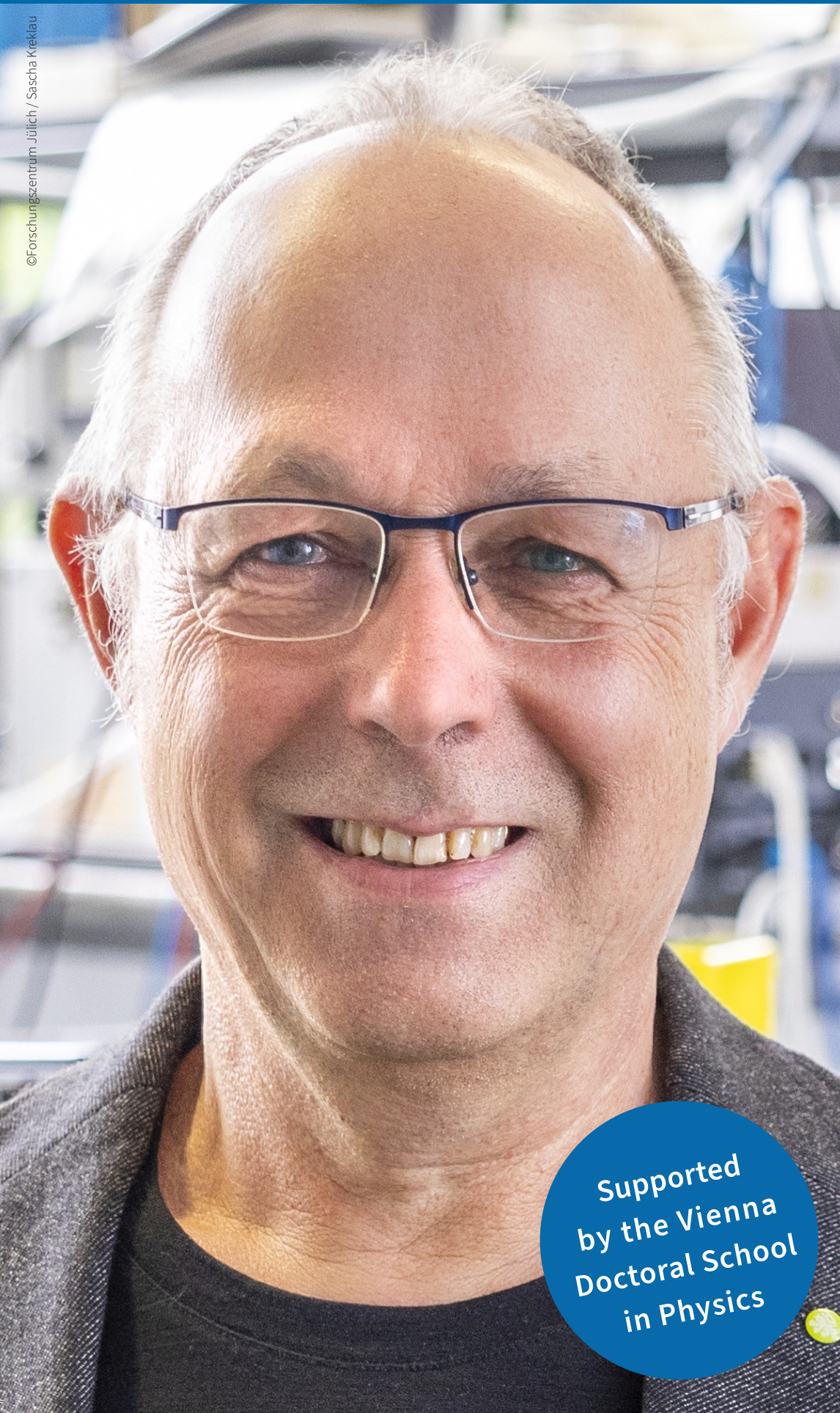
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Faculty of Physics

Physics Colloquium

# Aviation and the global climate – impacts and mitigation strategies

13 January 2025



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*The Physics Colloquium is a series of public lectures hosted by the Faculty of Physics of the University of Vienna, featuring internationally renowned speakers covering the full breadth of our fields of research.*

## Andreas Petzold

Forschungszentrum Jülich, Germany

[fz-juelich.de/profile/petzold\\_a](https://fz-juelich.de/profile/petzold_a)

## Aviation and the global climate – impacts and mitigation strategies

It has long been known that the CO<sub>2</sub> emissions from aviation have an impact on the global climate. However, the impact of air traffic goes beyond harmful CO<sub>2</sub> emissions. It results from a complex set of processes, including the direct emissions of climate-relevant species, such as carbon dioxide (CO<sub>2</sub>), water vapour (H<sub>2</sub>O), nitrogen oxide (NO<sub>x</sub>) and aerosol particles (soot, organics, and sulphate). These emissions also have indirect effects, such as the formation of persistent contrails and contrail cirrus, NO<sub>x</sub>-induced ozone depletion and aerosol-cloud interactions. Because around 60% of the warming effect in association with aviation emissions comes from persistent contrails and contrail cirrus, the focus has shifted from CO<sub>2</sub> to the condensation trails and towards potential ways of contrail avoidance as one measure for reducing the climate impact of aviation.

The lecture aims to provide an overview of aviation emissions and their impact on climate change, as well as the strategies currently being discussed for a more environmentally friendly aviation system.

**Monday, 13 January at 13:30-15:00**

A light lunch buffet will be offered before the lecture at 13:00.

**Lise-Meitner lecture hall**

Faculty of Physics, Strudlhofgasse 4, 1090 Vienna

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