SPARC
Stratosphere-troposphere
Processes And their Role in Climate

We are celebrating our 30th anniversary

Prof. Thomas Peter

Research on climate intervention by stratospheric aerosol injection (SAI) – should SPARC engage?

Friday 7th October 2022 at 12.00 UTC

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SPARC's anniversary webinar series

30 Years

This year marks the **30th anniversary** of SPARC, a core project of the World Climate Research Programme. In this time, SPARC has evolved into a major international research coordination hub for atmospheric sciences, with the primary goal to facilitate research that improves our understanding of atmospheric processes and their role in climate. SPARC's initial focus was on stratospheric science linked to ozone depletion, but has expanded to cover the whole atmosphere including the coupled troposphere-stratosphere system and impacts on surface climate.

SPARC is particularly recognised for its lively scientific community. To celebrate SPARC's achievements over the last three decades, we invite you all to celebrate with us and join us our third and last webinar before the SPARC General Assembly in October 2022.

The third SPARC 30th anniversary webinar will take place on:

Friday 7th October 2022 at 12.00 UTC.

Prof. Thomas Peter from the ETH Zürich will give a presentation on **"Research on climate intervention by stratospheric aerosol injection (SAI) – should SPARC engage?"**. In a 2006 editorial, Paul Crutzen contemplated the need for research on increasing the planetary albedo through stratospheric sulfur injections to solve the policy dilemma of reducing anthropogenic sulfate particle concentrations in the troposphere, which are associated with cooling the planet and offsetting some of the anthropogenic increase in greenhouse gas warming. Reactions ranged from skepticism to outright and forceful rejection, not only because of the numerous unquantified negative side effects, but also because the intervention would not solve the real climate problem. In 2022, sixteen years after Crutzen broke the geoengineering taboo, global greenhouse gas emissions offer little hope of achieving the rapid reductions needed to meet the 1.5-degree target set in the 2015 Paris Agreement. Before an implementation of stratospheric aerosol injections (SAI) can be considered, there is the question of how the scientific assessment of SAI has evolved over the past 16 years. How well do we now understand the chemistry and physics of sulfur-containing gases (SO_2, H2S) and aqueous sulfuric acid aerosols? Are there other compounds, that may be more efficient scatterers of solar radiation than $H2SO_4$-H2O aerosol and with less negative side effects? And how well do we understand their physico-chemical properties? Finally, when will we as scientists be ready to compare the uncertainties and risks of using any of these SAI techniques versus not using them if greenhouse gas emissions continue unabated and efficient techniques for negative emissions are not yet within reach? We will consider these questions and try to put them in a SPARC and WCRP perspective.

Brief Resume of Prof. Thomas Peter

Tom Peter has been Full Professor for Atmospheric Chemistry at ETH's Institute for Atmospheric and Climate Science since January 1999. He served multiply as co-author on international scientific assessments on the development of the stratospheric ozone layer. Since 1997 he has been a member of the scientific steering group of SPARC, whose co-chair he was 2007-2012 (together with Ted Shepherd). In the Department of Environmental Systems Science, he served as chair of the strategic planning committee 2004-2012 and as Head of Department 2013-2017. Since 2015 he is on the WCRP Joint Steering Committee, and since 2018 member of the ETH Research Commission.

To register please click the link below. We look forward seeing you.

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