

History of Physics Division Fachverband Geschichte der Physik (GP)

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Physics and the Environment in Historical Perspectives

Environmental issues are among the most relevant subjects of current scientific research. Addressing these concerns requires multidisciplinary approaches and the ability to integrate physics with other scientific disciplines, like biology, earth sciences or chemistry, and with approaches from the humanities such as transformation studies or economics. To understand the diversity of environmental structures and dynamics, a wide range of physical methods must be combined tailored to the specific objectives at hand.

Throughout history, we witness a variety of developments that sought to exclude or at least to control 'the environment' (which is not a timeless concept) from the production, communication, and adaptation of physical knowledge. The development and standardization of laboratories along with its related practices and instruments, but also approaches such as simulations (not necessarily only mathematical) and modelling can be seen as attempts to stabilize knowledge production against the disorder and unpredictability of the environment.

Many modern topics in environmental science can be seen as responses to the limits of human activity that are set by the environment, that these limits can no longer be ignored, and that we need to draw consequences from these boundaries and act within them. Additionally, for field scientists and particularly their instruments, dealing with unfamiliar environments has brought and still brings exposure to dangers and threats such as temperatures and temperature fluctuations, humidity or dryness, instabilities, etc. However, these environments provide not only challenges but also opportunities for new and different research. Gaining a better understanding of the world as a complex system required that large amounts of data needed to be taken and combined. At the same time, the interaction with representatives of different knowledge systems who, however, had a profound understanding of their own specific environment, led to conflicts that helped to charter the rules as well as the limits of scientific knowledge production.

Overview of Invited Talks and Sessions

Plenary Talk of the History of Physics Division

PV III Tue 9:00– 9:45 ELP 6: HS 3+4 **Physics as an environmental science: The case of climate history**
— •RICHARD STALEY

Invited Talks

GP 1.1 Mon 16:30–17:30 ELP 3: HS 2.33 **Competition, Cooperation, Representation. The Many Faces of the International Geophysical Year from the German Perspective** — •BEATE CERANSKI

GP 4.1 Tue 16:30–17:30 ELP 3: HS 2.33 **Infusoria, Cress, and Tulips: Physical Experiments with Living Organisms** — •CATERINA SCHÜRCH

Invited Talks of the joint Symposium How to Cope with Apocalyptic Narratives? (SYAN)

See SYAN for the full program of the symposium.

SYAN 1.1 Mon 14:00–14:40 ELP 6: HS 4 **The Apocalyptic Moment Is Over - And It Won't Come Back Anytime Soon** — •FRANK UEKOETTER

SYAN 1.2 Mon 14:40–15:20 ELP 6: HS 4 **Shaping Cold War Futures through the Nuclear Winter Study: Narratives, Imaginaries and Legitimacy** — •EGLE RINDZEVICIUTE

SYAN 1.3 Mon 15:20–16:00 ELP 6: HS 4 **The Role of Storytelling in Climate Communication** — •DENISE MÜLLER-DUM

Sessions

GP 1.1–1.3 Mon 16:30–18:30 ELP 3: HS 2.33 **Understanding the Environment**

GP 2 Mon 19:00–20:00 ELP 3: HS 2.33 **Meeting of Early Career Scholars**

GP 3.1–3.3 Tue 14:00–15:30 ELP 3: HS 2.33 **Dirty Physics**

GP 4.1–4.3 Tue 16:30–18:30 ELP 3: HS 2.33 **Exploring the experimental approach**

GP 5 Tue 18:30–20:00 ELP 3: HS 2.33 **Members' Assembly**

GP 6.1–6.3 Wed 11:00–12:30 ELP 3: HS 2.33 **Crossing Disciplinary and Institutional Boundaries**

GP 7.1–7.4 Wed 14:00–16:00 ELP 3: HS 2.33 **Instruments and Exhibitions**

GP 8.1–8.3 Wed 16:30–18:00 ELP 3: HS 2.33 **Closing Session**

Meeting of Early Career Scholars

Monday 19:00–20:00 ELP 3: HS 2.33

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Members' Assembly of the History of Physics Division

Tuesday 18:30–20:00 ELP 3: HS 2.33