

The Perils of Prediction in the Physical Sciences: Historical and Epistemological Perspectives

1st International Workshop – 18/19 March 2021

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School of Science
National and Kapodistrian University of Athens*

Program – (Eastern European Time / UTC +2)

The conference will take place online on Zoom:

Zoom Link: <https://zoom.us/j/92035551794?pwd=TVdsQ0pmWjRMRHh1bGhlOVdyL0dSUT09>

| March 18 |
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| 12:00 – 2:00pm Welcome / Prediction in Classical and Quantum Physics (Chair: Aristotle Tympas) |
| Theodore Arabatzis , National and Kapodistrian University of Athens <i>The Perils of Prediction Project</i> |
| Léna Soler , Université de Lorraine, Archives Henri Poincaré <i>What Would It Be like to Be Bohmians? Predictions as Paradigm Dependent: The (Big) Difference That It Makes</i> |
| Vasiliki Christopoulou , National and Kapodistrian University of Athens <i>From Dimensions to Physical Laws: Lord Rayleigh's Dimensional Approach to Prediction</i> |
| 3:30 – 5:30pm Computation, Simulation, and Prediction (Chair: Ana Simões) |
| Aristotle Tympas , National and Kapodistrian University of Athens <i>On Searching for One More Imaginary Particle and Missing the One Real Planet: Historiographical Considerations on Scientific Computing</i> |
| Hans Hasse & Johannes Lenhard , University of Kaiserslautern <i>Created by Prediction: On the History, Ontology, and Computation of the Lennard-Jones Fluid</i> |
| Stelios Kampouridis , National and Kapodistrian University of Athens <i>"There isn't a single solution to everything": Predictive Reliability and Hierarchy of Models in Computational Quantum Chemistry</i> |

6.00 - 8.00pm
The Changing Fortunes of Prediction
(Chair: Friedrich Steinle)

Radin Dardashti, University of Wuppertal
Predictions in Fundamental Physics and the Future of Theory Assessment?

Grigoris Panoutsopoulos, National and Kapodistrian University of Athens
The Changing Concept of Prediction in High Energy Physics: From the Standard Model to the Post-Higgs Era

Miles MacLeod, University of Twente
Doing without Prediction: The Case of Sustainability Science

March 19

12:30 – 2:00pm
Prediction in the Environmental Sciences
(Chair: Theodore Arabatzis)

Gabriele Gramelsberger, RWTH Aachen University
Cloud Parametrization Deadlock in Climate Models

Matthias Heymann, Aarhus University
Climate Modeling and the Perils of Prediction

3:30 – 5:30pm
Prediction in the Earth Sciences
(Chair: Kostas Gavroglu)

Stathis Arapostathis, National and Kapodistrian University of Athens
Dusty Predictions: Technoscientific Networks, Research Politics and Regional Uncertainties

Gregory Clancey, National University of Singapore
Predictive Models and Their Markets: The Case of Seismology

Iraklis Katsaloulis, National and Kapodistrian University of Athens
Earthquake Prediction: The Greek Case in a Global Context

6.00 - 8.00pm
The Epistemology of Prediction
(Chair: Hasok Chang)

Wendy Parker, Virginia Tech
Predicting Future Weather and Climate: From Models to Expert Judgment

Alex Broadbent, University of Johannesburg
What Is a Good Prediction?

Stéphanie Ruphy, Ecole normale supérieure – Université PSL
Should We Still Value the Unpredictability of Scientific Inquiry?