

**THE HEBREW UNIVERSITY OF JERUSALEM
THE INSTITUTE FOR ADVANCED STUDIES**

**Joint Research Conference of the Institute for Advanced Studies,
the Israel Science Foundation**

**SOLAR, COSMIC RAYS AND CLIMATE
CONNECTIONS**

April 25-29, 2010

**All lectures will take place at the Feldman Building,
on the Edmond J. Safra, Givat Ram Campus**

Organizers:

Nir Shaviv (The Hebrew University)

Henrik Svensmark (Technical University of Denmark)

Sunday, April 25

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| 9:30-10:30 | Registration and coffee |
| 10:30-11:00 | Welcome and Introduction: Nir Shaviv (The Hebrew University) |
| 11:00-12:00 | Dibyendu Nandi (Indian Institute of Science Education and Research)
<i>Solar Activity: From Understanding to Forecasting</i> |
| 12:00-13:00 | Yvonne Unruh (Imperial College, London)
<i>Solar Spectral Irradiance Reconstructions and Observations</i> |

13:00-14:45	Lunch at Beit Belgia
14:45-15:30	Kalevi Mursula (University of Oulu) <i>The Year when the Solar Magnetic Field Burst Apart: The Strange Evolution of Solar Cycle 23</i>
15:30-16:00	Shlomi Ziskin (The Hebrew University) <i>Quantifying the Solar Radiative Forcing over the 20th Century, and the 21st Century Warming</i>
16:00-16:30	Coffee break
16:30-17:30	Jürg Beer (Eawag, Swiss Federal Institute of Aquatic Science and Technology) <i>Causes of Climate Change: Detection and Attribution</i>
17:30-19:30	Reception at the IAS lobby

Monday, April 26

9:00-9:45	Lev Pus'tulnik (Tel Aviv University and Israel Space Agency) <i>Space Weather Influence on the Earth Wheat Markets: Past, Present and Future</i>
9:45-10:45	Jan Veizer (University of Ottawa) <i>The Role of Water in the Fate of Carbon Dioxide: Implications for the Climate System</i>
10:45-11:30	Coffee break
11:30-12:30	Mordechai Stein (Geological Survey of Israel) <i>Solar Frequencies are Revealed in the Annual – Resolution Lake Lisan Sedimentary Record</i>
12:30-13:00	Kalevi Mursula II <i>Corrected Fluxes of Magnetospheric Energetic Particles for Three Solar Cycles: The Longest Homogeneous Series of One Solar-Related Climate Driver</i>
13:00-14:45	Lunch at Beit Belgia
14:45-15:45	Klaus Scherer (Ruhr Universität Bochum)

Some Remarks on Cosmic Ray Drifts and the LIS

15:45-16:45 **Horst Fichtner** (Ruhr Universität Bochum)
The Hale Period and Climate Forcing

16:45-17:15 **Coffee break**

17:15-18:15 **Discussion and Debate**
Can we Predict Solar Activity?
How Large is the Solar Climate Link?
Is It Amplified?
Is the Climate very Sensitive?

Tuesday, April 27

9:00-10:00 **Ilya Usoskin** (University of Oulu)
Cosmic Ray Induced Ionization – A Solar-Terrestrial Link

10:00-11:00 **Augusto Mangini** (Heidelberger Akademie der
Wissenschaften)
*Do We Find A Relationship between Cosmic Rays and
Climate in the Past?*

11:00-11:30 **Coffee break**

11:30-12:30 **Giles Harrison** (The University of Reading)
*Atmospheric Electricity Changes and Surface Observations of
Clouds*

12:30-14:30 **Lunch at Beit Belgia**

14:30-15:30 **Brian Tinsley** (University of Texas at Dallas)
The Role of the Global Circuit

15:30-16:30 **Jón-Egil Kristjánsson** (University of Oslo)
Can We Detect A Cosmic Ray Signal in Satellite Data?

16:30-17:00 **Coffee break**

17:00-18:00 **Jasper Kirkby** (CERN)
The CLOUD Experiment at CERN

Wednesday, April 28

- 9:00-10:00 **Jens Olaf Pepke Pedersen** (Technical University of Denmark)
Ion-induced Nucleation
- 10:00-10:30 **Jasa Calogovic** (University of Zagreb)
Forbush Decreases and Clouds: Do Changes in Cosmic Ray Intensity Influence the Cloud Cover?
- 10:30-11:00 **Coffee break**
- 11:00-12:00 **Henrik Svensmark** (Technical University of Denmark)
Influence of Cosmic Radiation on Aerosol and Cloud Formation
- 12:00-19:00 Tour of Jerusalem
- 19:00-22:00 **Conference Dinner**

Thursday, April 29

- 9:00-9:30 **Benjamin Laken** (University of Sussex)
Some Recent Progress on Identifying and Modeling A Relationship between the GCR Flux and Climate
- 9:30-10:30 **Nir Shaviv** (The Hebrew University)
Non-Solar Related Evidence for A Cosmic Ray Climate Link
- 10:30-11:00 **Coffee break**
- 11:00-12:00 **Daniel Rosenfeld** (The Hebrew University)
Where on Earth Can Cosmic Rays Be Important for Cloud Forming Processes?
- 12:00-14:00 **Lunch at Beit Belgia**
- 14:00-14:30 **Frederic Effenberger** (Ruhr Universität Bochum)
The Significance of Anisotropic Diffusion for the Cosmic Ray Distribution in Our Galaxy

14:30-15:30

Discussion and Debate

Can We Prove or Rule Out Cosmic Rays?

Can We Determine the Mechanism(s) for a CR Climate Link?

What Else Do We Need to Do?