

# **Interdisciplinary Physics of the Sun**

**Spanish-German WE-Heraeus-Seminar**

**29 June – 04 July 2025**

**at the Physikzentrum Bad Honnef, Germany**

**WILHELM UND ELSE  
HERAEUS-STIFTUNG**



# Program

## Sunday, 29 June 2025

17:00 – 21:00    Registration

18:00            *BUFFET SUPPER and informal get-together*

## Monday, 30 June 2025

08:00            *BREAKFAST*

09:00 – 09:20    Scientific organizers    **Opening**

09:20 – 10:10    Elena Khomenko        **Realistic simulations of the solar  
magneto-convection including effects  
of partial ionization**

10:10 – 10:30    **Poster pitches:**  
                      - Duresa Temaj  
                      - Janna Martens  
                      - Ulrich von Kusserow  
                      - Richard Jean-Guillaume  
                      - Sanghita Chandra  
                      - Khalil Daiffallah

10:30 – 11:00    *COFFEE BREAK*

11:00 – 11:50    Bernd Heber            **Solar energetic particles – remote  
sensing and in situ observations**

11:50 – 12:40    Gaël Buldgen           **Dynamical processes in the Sun and  
non-standard solar models**

12:40            *LUNCH*

# Program

**Monday, 30 June 2025**

- |               |  |  |
|---------------|--|--|
| 13:30 – 14:20 | Taisuke Nagayama   | <b>Understanding solar opacity:<br/>Fundamentals, theoretical foundations,<br/>and experimental validation</b> |
| 14:20 – 15:10 | Alba Formicola   | <b>Experimental challenges in<br/>Underground Nuclear Astrophysics<br/>Laboratory</b>                          |
| 15:10 – 15:30 | <b>Poster pitches:</b> <ul style="list-style-type: none"><li>- Gwangson Choe</li><li>- Aswathi Krishnan Kutty</li><li>- Max McMurdo</li><li>- Helena Vila Crespo</li><li>- Daye Lim</li><li>- Hanna Strecker</li></ul> |  |
| 15:30 – 16:00 | <i>COFFEE BREAK</i>  |  |
| 16:00 – 16:50 | Daniel Müller  | <b>Solar orbiter: Science highlights and<br/>mission status</b>  |
| 16:50 – 17:40 | Nazareth Bello<br>Gonzales   | <b>Small-scale structure in the lower solar<br/>atmosphere</b>   |
| 17:40 – 18:00 | <b>Poster pitches:</b> <ul style="list-style-type: none"><li>- Hemanth Pruthvi</li><li>- Peter Hempel</li><li>- Ajay Kumar Yadav</li><li>- Andres Vicente Arevalo</li><li>- Xiang Li</li></ul>                         |  |
| 18:00         | <i>DINNER</i>  |  |

# Program

**Tuesday, 01 July 2025**

08:00	<i>BREAKFAST</i>	
09:00 – 09:50	Fernando Moreno Insertis	<b>Exploring magnetic flux cancellation from the solar photosphere to the corona.</b>
09:50 – 10:10	Tanayveer Singh Bhatia	<b>3D rMHD sunspot models and their implications for other cool stars</b>
10:10 – 10:30	<b>Poster pitches:</b> <ul style="list-style-type: none"><li>- Konrad Schmidt</li><li>- Eva Sola-Viladesau</li><li>- Robert Kamlah</li><li>- Vigeesh Gangadharan</li><li>- Ashish Mishra</li></ul>	
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:50	Frank Stefani	<b>Solar magnetohydrodynamics: Paradigmatic liquid-metal experiments and some theoretical aspects</b>
11:50 – 12:40	Francesco Villante	<b>The response of the sun to modifications of its internal properties</b>
12:40	<i>LUNCH</i>	
13:30 – 15:30	<b>Poster session</b>	
15:30 – 16:00	<i>COFFEE BREAK</i>	
16:00 – 16:50	Eliana Masha	<b>Solar pp-chain reactions studied underground</b>
16:50 – 17:40	Juan Manuel Borrero	<b>Solar spectropolarimetry</b>
17:40 – 18:00	Gianluca Imbriani	<b>Present knowledge of <math>{}^7\text{Be}(p,\gamma){}^8\text{B}</math> and <math>{}^3\text{He}({}^4\text{He},\gamma){}^7\text{Be}</math></b>
18:00	<i>DINNER</i>	

# Program

Wednesday, 02 July 2025

08:00	<i>BREAKFAST</i>	
09:00 – 09:50	Hector Socas-Navarro	<b>Current status of the European Solar Telescope</b>
09:50 – 10:40	Alessandra Guglielmetti	<b>Solar fusion cross sections III: a nuclear physics perspective</b>
10:40 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:50	Manuel Collados	<b>Spectropolarimetry with VTT and GREGOR: 25+ years of successful German-Spanish collaboration</b>
11:50 – 12:40	Aldo Serenelli	<b>The standard solar model</b>
12:40	<i>LUNCH</i>	
13:30 – 17:30?	<b>Excursion</b>	
18:00	<i>HERAEUS DINNER</i> (social event with cold & warm buffet with complimentary drinks)	

# Program

Thursday, 03 July 2025

08:00            *BREAKFAST*

09:00 – 09:50    Maria Bergemann        **Solar elemental abundances**

09:50 – 10:40    Rachel Howe            **Helioseismology at low-degree: BiSON results through solar cycles**

10:40 – 11:00    *COFFEE BREAK*

11:00 – 11:30    Stefan Krückeberg       **DFG's Priority Programme (Schwerpunktprogramm)**

11:30 – 12:30    **Discussion about a possible DFG priority programme submission in 2026**

12:30            *LUNCH*

13:30 – 14:20    Michèle Heurs           **Deutsches Zentrum für Astrophysik and gravitational wave detections**

14:20 – 15:10    Natalie Krivova         **Past solar activity**

15:10 – 15:30    Huidong Hu             **Lateral deformation of two coronal mass ejections in the transition from non-radial to radial propagation**

# Program

Thursday, 03 July 2025

15:30 – 16:00    *COFFEE BRREAK*

16:00 – 16:50    Hardi Peter            **The Corona of the Sun and its connection to the surface**

16:50 – 17:10    Hemanth Pruthvi            **TauSoL imaging spectropolarimeter: Concept and design**

17:10 – 17:30    Álvaro Jesús Quero Ballesteros            **Spectrometry of cosmic-ray neutrons with the high efficiency neutron spectrometry array**

17:30 – 17:50    Matthias Schubert            **First solar line scans with the visible tunable filter VTF at the 4m class Daniel K. Inouye solar telescope**

18:00            DINNER

# Program

**Friday, 04 July 2025**

08:00	<i>BREAKFAST</i>	
09:00 – 09:50	Carsten Denker	<b>Observations of Solar Magnetic Activity</b>
09:50 – 10:40	Michael Wurm	<b>Solar neutrino measurements by Borexino and at future detectors</b>
10:40 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:20	Tom Van Doorselaere	<b>Global coronal models driven with Alfven and kink waves</b>
11:20 – 11:40	Yoshiki Hatta	<b>Solar neutrino flux fluctuations caused by gravity modes</b>
11:40 – 12:00	Yago Herrera	<b>Standard solar model and variations with Kernels method</b>
12:00 – 12:30	Scientific organizers	<b>Closing</b>
12:30	<i>LUNCH</i>	

**End of the seminar and departure**

*NO DINNER for participants leaving on Saturday; however, a self-service breakfast will be provided on Saturday morning*