

# Wholesun IPA program 4 to 22th of March 2024

The 2024 Whole Sun program at Institut Pascal is an ERC founded program to mostly discuss and advance scientific projects about the Sun and solar-type stars. Two talks are usually given the morning from 11am to noon-ish in the small amphitheater of the institute. It is a 3week long workshop with the whole afternoon devoted to collaborative work and (sub)group scientific discussions.

Again all main topics studied within Whole Sun project will be discussed all three weeks.

**WP1:** Dynamo, convection and the origin of solar magnetic field  
**WP2:** Flux emergence on multi-scale and its subsequent evolution  
**WP3:** The nature of solar magnetic eruptions, flares and jets  
**WP4:** Heating and thermo-dynamical coupling of the solar atmosphere, Energy budget  
**WP5:** The solar-stellar connection and the influence of metallicity and global stellar parameters  
**WPX:** New solar physics codes to prepare Exa-scale supercomputing era + Convection benchmark

So come with your ideas and solar physics problems to discuss at any time during the 3 weeks.

***Zoom link for remote people will be provided in due time.  
Contact us if you wish to participate.***

**Seminar Program of the first week (4th to 8th of March) :**  
**Seminars start at 11am, for twice 30+5 mn:**

**Monday 4th\*:** Damien Fournier: Time distance helioseismology studies of the solar interior; Charlotte Gehan: New asteroseismology results\*;  
*These 2 talks may be move exceptionally later in the week as this is the first day of the program.*

**Tuesday 5th:** Reetika Joshi: "Integrating observations and models : unraveling solar eruptions"; Kostas Moraitis: "Energy and helicity evolution in jet-producing flux emergence simulations"

**Wednesday 6th:** Eugene Zhuleku: "Toroidal vs horizontal flux tube emergence: jets and eruptions" ; Ernest Alsina: "Polarized radiative transfer of forbidden coronal lines using rMHD models"

**Thursday 7th:** Daniel Nobrega Silverio: "Deciphering Solar Coronal Heating: Energizing Small-scale Loops through Surface Convection"; Catherine Blume:

"Inertial Waves in a Nonlinear Simulation of the Sun's Convection Zone and Radiative Interior"

**Friday 8th:** Maxime Delorme: "What's new in the Dyablo-Whole Sun code?"  
Andrius Popovas: "Update on the global MHD simulations of the Sun"

*Coffee breaks are always in the morning at 10:30am and in the afternoon at 3:30pm.*

*Looking forward to seeing most of you at IPa in a few weeks time.*

### **Seminar Program of the second week (11th to 15th of March) :**

**Monday 11th:** C. Alissandrakis: Microwave emission from simulations of solar jets, computations and observations;

J. Trjillo Bueno: Exploring the magnetic fields of the upper solar chromosphere via ultraviolet spectropolarimetry

**Tuesday 12th:** M. Delorme: What new in the Dyablo-Whole Sun code?

A. Popovas: Update on the global MHD simulations of the Sun

**Wednesday 13th:** O. Faeder: EUV observables of simulated plasmoid-mediated reconnection in the solar corona;

Y. Bekki: The Sun's differential rotation is controlled by baroclinically-unstable inertial modes;

R. Shimada: Mean-Field Study of Stellar Activity-Rotation Relationship

**Thursday 14th:** B. Perri: Impact of far-side structures observed by Solar Orbiter on coronal and heliospheric wind simulations;

S. Sen: A Self-consistent Model of Post-Flare Coronal Rain in Solar Atmosphere

**Friday 15th:** A. Nindos: Magnetic helicity and energy budget of jet events from an emerging active region;

D. Przybylski: The quiet Sun chromosphere Muram simulation

### **Seminar Program of the third week (18th to 20th of March) :**

**Monday 18th:** A. Strugarek: Magnetochronology of solar-type stars dynamos: The Sun in time

**Tuesday 19th:** M. Luna: Study of the excitation of large amplitude oscillations in prominences by a nearby flare

**Wednesday 20th:** S. Cloutier: The mean butterfly diagram and the role of magnetic buoyancy in a Babcock-Leighton dynamo model of the Sun