The future of solar modelling : From a Standard to a Modern view of the Sun

Monday 4 September 2023 - Thursday 7 September 2023

Scientific Programme

Monday
8h45-9h00 Welcome (G. Buldgen)
9h00-9h45 The current state of solar modelling (Jørgen Christensen-Dalsgaard)
1. Observations - Abundances
9h45-10h30 Solar Abundances (A. Amarsi)
Coffee (10h30-11h00)
11h00-11h45 Abundances measurements from helioseismology (S. Vorontsov)
11h45-12h00 Recent inferences of abundances of individual elements from helioseismology (A. Oreshina)
2. Solar and stellar modelling
12h00-12h45 Standard and extended Calibration procedures (S. Ayukov)
LUNCH (12h45-14h00)
2.1 Diffusion
14h00-14h45 Diffusion and radiative accelerations (M. Deal)
2.2 Angular momentum transport
14h45-15h30 Models with AM transport (P. Eggenberger)
Coffee (15h30-16h00)
16h00 – 16h45 Hydrodynamical simulations and AM transport (L. Petitdemange)
16h45-17h30 Gravity mode excitation by CBM/ transport by IGW (Charly Pinçon)
17h30-18h00 Open discussion
Tuesday

2.3 Convection
9h00-9h45 Convection and convective boundary mixing (A. Le Saux)
2.4 Equation of state – Nuclear reactions
9h45-10h30 Nuclear reactions and electronic screening (W. Däppen)
Coffee (10h30-11h00)
11h00-11h45 SAHA-S EOS (V. Baturin)
11h45-12h30 MHD EOS (R. Trampedach)
LUNCH (12h30-14h00)
2.5 Helioseismic constraints and Neutrino experiments
14h00-14h45 Neutrino measurements and abundances (F. Villante)
14h45-15h30 Current datasets/observations (T. Appourchaux)
Coffee (15h30-16h00)
16h00-16h45 Current state of solar rotation measurements (R. Garcia)
16h45-17h30 Open discussion
Wednesday

2.6 Opacities
9h00-9h45 Opacity OPAS (P. Cossé)
9h45-10h30 Opacity SCO-RCG (J.C. Pain)
Coffee (10h30-11h00)
11h00-11h45 Opacity OP (A. Pradhan)
11h45-12h30 Opacity OPLIB (J. Colgan/C.Fontes)
LUNCH (12h30-14h00)
2.7 Seismic modelling techniques
14h00-14h45 Asteroseimic inversion techniques (J. Bétrisey)
14h45-15h30 Solar seismic models (G. Buldgen)
Coffee (15h30-16h00)
16h00-17h00 Open discussion
Thursday

3. PMS – From the Sun to stars
9h00-9h45 Planetary formation models (T. Guillot)

9h45-10h30 Effects of pre-main sequence evolution (M. Kunitomo)
Coffee (10h30-11h00)
11h00-11h45 Importance of the Sun for other stars (G. Meynet)
11h45-12h30 Concluding remarks and associated discussion (A. Noels)
LUNCH (12h30-14h00)