



PAUL SCHERRER INSTITUT

PSI Colloquium

Super-Earths and Neptune-mass planets: a window to planetary-system diversity

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DATE : Friday, June 21, 2013
COFFEE: 11:00 am
SEMINAR: 11:15 am
PLACE: WHGA/001

Abstract:

Our understanding of planetary systems has tremendously changed over the past 15 years after the detection of exoplanets orbiting other stars similar to the Sun. I will report on the results of a 10-year survey carried out at the La Silla Observatory with the HARPS spectrograph to detect and characterise an emerging large population of exoplanets in the super-Earth and Neptune-mass regime, not observed in the Solar System. The size of our star sample and the precision achieved with HARPS have led to the detection of a sufficiently large number of low-mass planets to study the statistical properties of their orbital elements, the correlation of host-star properties with the planet masses, as well as the occurrence rate of planetary systems around solar-type stars. These results will be discussed in comparison with equivalent results obtained for M-dwarf surveys and with the recent findings of the Kepler satellite, bringing light to our understanding of the formation and evolution of planetary systems.