

Understanding and Predicting the Dynamic Sun and Heliosphere

Despite almost a century of modern solar observations and over 50 years of space exploration, some of the fundamental problems in solar physics are not fully understood yet. The solar corona heating, the solar wind acceleration, the initiation and propagation of Coronal Mass Ejections (CMEs), and the solar cycle do not have a complete theoretical framework to describe and predict these phenomena. The lack of a complete theory, in addition to the large range of both spatial and temporal scales involved, make it challenging to develop numerical models for solar and space physics. Despite of the challenges, a great progress has been made in the last decade in developing numerical models for the solar corona, the solar wind, and CMEs. In my talk, I will describe a state of the art model for the solar corona and the solar wind, and I will demonstrate how the model can be used to improve our understanding on solar corona phenomena and observations. I will also describe the plan for the near future in solar physics exploration and will briefly mention how space and solar physics can be used in order to understand astrophysical phenomena.

Friday, April 4, 2014
OPS 140
4:00 – 5:00 pm

Meet and Greet
OPS 140
3:00 – 4:00pm



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