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# Physics Colloquium

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## “How to improve model-based predictions of the solar cycle”

**Dr. Andres Munoz**  
**Harvard-Smithsonian Center for**  
**Astrophysics**  
**Friday, August 30, 2013**  
**4:10 – 5:00 pm, 108 EPS**

**Abstract:** The solar cycle and its associated magnetic activity are the main drivers behind changes in the interplanetary environment and Earth’s upper atmosphere (commonly referred to as space weather). These changes have a direct impact on the lifetime of space-based assets and can create hazards to astronauts in space. In recent years there has been an effort to develop accurate solar cycle predictions (with aims at predicting the long-term evolution of space weather), leading to nearly a hundred widely spread predictions for the amplitude of solar cycle 24. Of particular interest are model based-predictions, which made their first debut in 2006-2007, and that have the greatest potential for improvement.

In this talk we will discuss the current view of how the solar-cycle operates, and how this ties to current model-based predictions. We will continue with an assessment of their performance compared with other types of predictions, and discuss why, in their current stage of development, their results are superfluous. Finally, we will discuss several aspects in which model-based predictions can be improved, and the work that has been done so far in each of those aspects.

**Host:** Piet Martens

**Refreshments 3:45 p.m.**  
**EPS 2nd Floor Atrium**

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