

Thursday 3 PM  
March 21 - 1601 Elings Hall - CNSI

**State of the Universe**  
**Planck 2013 - First Cosmology Data Release**

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The Planck satellite is a joint NASA/ESA mission dedicated to exploring the fundamental parameters of our universe, from its essential ingredients, initial state, and evolution to the present, by observing the remnant radiation from creation (the Cosmic Microwave Background). Planck was launched in May of 2009. On March 21<sup>st</sup> the Planck team will release its first cosmological data set. This dataset is massive by comparison to the three previous satellite missions (RELIKT (on Prognos 9), COBE and WMAP) with much better angular resolution and vastly higher sensitivity. The detectors on Planck allow near photon noise limited performance with noise limited by the universe itself in some channels. The sensitivity achieved in one year is equal to more than a millennium of WMAP and more than a million years of COBE observations. The data are sensitive and stable enough to test some predictions (such as isotropy) near the part per billion level. We will present the maps and introduce some of the many conclusions that arise from interpreting this dataset. This first data release represents just a part of the first 15 months of observations, which in turn is just a part of the full data set. Much more will be released in 2014 and 2015. Join us as we unveil this unique view of our universe.