



## **Physics Colloquium**

**Friday April 12th, 2012  
4:10 – 5:00 pm, EPS108**

**"X-ray view of Magnetars, the strongest magnet in the universe?"**

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### **Abstract:**

Soft gamma repeaters (SGRs) and Anomalous X-ray Pulsars (AXPs) are strange X-ray pulsars showing slow rotations, bright soft X-rays, and recurrent burst activities. Based on accumulating observational evidence, these pulsars are now thought to be magnetically powered neutron stars, or "magnetars" with an extremely strong magnetic field of  $10^{10-11}$  T. Such a field is 2-3 orders of magnitudes higher than those of normal neutron stars, and well above the quantum critical field,  $4.4 \times 10^9$  T. Although such a strong field is considered to induce characteristic burst activities and particular X-ray spectra, little is known about how the magnetic energy is dissipated and converted into the radiation. In order to provide an unified characterization of this class, we performed a comprehensive study of broad-band X-ray spectra, and revealed the spectral evolution correlated with their characteristic age and their magnetic field strength. I will also introduce recent progress of X-ray observation of these mysterious X-ray sources and the future missions.

### **Host:**

Sachiko Tsuruta

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