

## P05 MAXI results of the Galactic ultra-luminous X-ray pulsar Swift J0243.6+6124

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Swift J0243.6+6124 is a new Galactic Be/X-ray binary pulsar discovered on 2017. The MAXI all-sky monitor triggered on the outburst of this X-ray source on September 29 but could not distinguish it from the nearby known object LS I +61 303. On October 3, Swift BAT on the source identified it as a new transient source. The pulsation with the  $\sim 9.86$  s period was detected by the Swift XRT follow up observation. This X-ray outburst of Swift J0243.6+6124 continued for about 4 months, and the flux reached over 5 Crab at the peak. The source distance was estimated to be  $\sim 7$  kpc with the GAIA DR2. This suggests that the X-ray luminosity reached ten times the Eddington luminosity for a 1.4 solar mass neutron star. We present the result of MAXI-GSC data analysis around the flux peak. X-ray spectrum softened as the luminosity increased, and then hardened as it faded. The folded pulse profile exhibited energy dependence. We also investigated the relation between the luminosity and the spin-up rate and found that the positive correlation all the way up to ten times the Eddington luminosity. Assuming the power-laws accretion-torque model proposed by Ghosh & Lamb(1979), the surface magnetic field is estimated to be about 10 to the 12th power Gauss.

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**Session Classification:** Poster Short Presentations