J144a **Change of Pulsar State in the Gamma-ray Binary HESS J0632+057**

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Gamma-ray binaries, i.e., binaries with peak energy above 1 MeV, consist of a massive star (a Be star with a circumstellar disk or a main-sequence O star) and a compact object. For those with a compact object of unknown nature, the pulsar wind scenario and the microquasar scenario, have been proposed to explain the origin of high energy emission. HESS J0632+057 is one of such systems with a Be star as the optical counterpart. The orbit is wide ($P_{\rm orb} \sim 315\,{\rm d}$) and highly eccentric ($e = 0.83$). The system exhibits two X-ray outbursts per orbit, one prior to the apastron and the other after it, while the X-ray flux stays low around the periastron where strongest interaction is expected to occur between the Be star and the compact object. There is also an X-ray dip near the apastron. Performing 3D SPH simulations of the interaction between the pulsar and the circumstellar environment of the Be star, we showed, at the last ASJ meeting, that a naive approach only leads to a bright X-ray outburst near the periastron and thus a mechanism is needed to stop the pulsar wind around the periastron. In this talk, we report on the result from our improved numerical model, where the pulsar wind is extinguished if the mass-capture rate by the pulsar exceeds a critical value (propeller state) and ignites again after the rate goes down below it (ejector state). We find that if the spin down luminosity is as high as $10^{35}\,{\rm erg\,s^{-1}}$, a very high Be-disk density (base density $\gg 10^{-10}\,{\rm g\,cm^{-3}}$) is needed to stop the pulsar wind around the periastron. We briefly discuss the X-ray flux at phases when the pulsar is a propeller.