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The geometry of SMC X-2 from Polestar ANKUR ROY, University of Massachusetts Lowell, RIGEL CAPPALLO, Lowell Center for Space Science and Technology, GEORGIOS VASILOPOULOS, Yale University, SAYANTAN BHATTACHARYA, SILAS LAYCOCK, DIMITRIS CHRISTODOULOU, University of Massachusetts Lowell — SMC X-2 is one of the brightest pulsars in the Small Magellanic Cloud (SMC). This transient Be/X-ray pulsar with a spin period of $P_{spin} = 2:37$ s and an orbital period of $P_{orb} = 18.62 \pm 0.02$ days last underwent a Type-II outburst in 2015. Following its detection by MAXI, simultaneous observations were carried out by Swift, XMM-Newton, and NuSTAR throughout the outburst phase extending for up to two months. The source is one of few SMC pulsars in which the propeller state was observed and a cyclotron resonance feature was detected at $E \sim 27$ keV. The onset of the propeller regime causes dramatic changes in the accretion state and the neutron-star magnetosphere. This serves as impetus for trying to model the observed pulse profiles in various accretion states in order to deduce the geometry of the emitting regions. For this analysis, we use the geometrical pulse-profile modeling code Polestar. This modeling effort will help us pinpoint the geometry of the emission and understand the energy and accretion changes as the source evolves past outburst and toward lower luminosity states.

Ankur Roy
University of Massachusetts Lowell

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