

PRE(Photospheric radius expansion) X-ray burst simulation with 1D stellar evolution code

Saturday, 25 August 2018 17:05 (10 minutes)

MESA(Modules for Experiments in Stellar Astrophysics) simulate stellar evolution to solve the equations including many physical processes such as nuclear reaction, equation of state, and opacity in 1-D. It can also simulate the X-ray burst using the profile of neutron star surface and the accretion information. But MESA does not deal with the PRE(Photospheric Radius Expansion) phenomena because if its luminosity goes beyond the Eddington limit without special conditions, the simulation does not proceed due to time step problem. So here, we are looking for a way to solve this problem to simulate the PRE burst using MESA. Next, we will study the conditions that cause PRE.

Primary authors: SEONG, GWANGEON (UNIST); Prof. KYUJIN, Kwak (UNIST)

Presenter: SEONG, GWANGEON (UNIST)

Session Classification: YSS