

1147-35-354

**Yan Guo, Mahir Hadzic and Juhi Jang\*** (juhi.jang@usc.edu). *Continued Gravitational Collapse for Newtonian Stars.*

The classical model of an isolated selfgravitating gaseous star is given by the Euler-Poisson system with a polytropic pressure law  $P(\rho) = \rho^\gamma$ ,  $\gamma > 1$ . For any  $1 < \gamma < \frac{4}{3}$ , we construct an infinite-dimensional family of collapsing solutions to the Euler-Poisson system whose density is in general space inhomogeneous and undergoes gravitational blowup along a prescribed space-time surface, with continuous mass absorption at the origin. The leading order singular behavior is described by an explicit collapsing solution of the pressureless Euler-Poisson system. (Received January 21, 2019)