

1154-35-2509

**Dohyun Kwon\*** (dhkwon@g.ucla.edu), 520 Portola Plaza, Math Sciences Building 6363, Los Angeles, CA 90095, and **Alpár Richárd Mészáros**. *Nonlinear diffusion equations with discontinuous nonlinearities*.

In this talk, I will consider degenerate dependent diffusion equations with discontinuous nonlinearities. In this model, the intensity of the diffusion is discontinuous, which describes so-called self-organized criticality phenomena in sandpile models. In order to show the well-posedness of this problem, we consider its gradient flow formulation in the Wasserstein space. Relying on this approach, we discover a link to recent models on congested crowd dynamics. In particular, we introduce a pressure field which characterizes the emerging critical regions. This is a joint work with Alpár Richárd Mészáros (Durham University). (Received September 17, 2019)