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Michael Ludkovski* (ludkovski@pstat.ucsb.edu). *Interacting Particle Systems for Systemic Risk*. Preliminary report.

We propose an interacting particle system description of the banking system. While net bank assets evolve independently under normal conditions, defaults trigger a mean-field type interaction that creates systemic risk. We work with a stochastic size of the economy, with new banks added spontaneously according to a mean-field birth process. We discuss stability of the system and numerical analysis of the likely paths of systemic failure and corresponding rare event probabilities. (Joint work with Tomoyuki Ichiba (UCSB).) (Received September 25, 2012)