Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

On the Marginal Stability of Glassy Systems LE YAN, New York University, MARCO BAITY-JESI, La Sapienza Università di Roma, MARKUS MÜLLER, The Abdus Salam International Center for Theoretical Physics, MATTHIEU WYART, New York University — In various glassy systems that are out of equilibrium, like spin glasses and granular packings, the dynamics appears to be critical: avalanches involving almost the whole system could happen. A recent conceptual breakthrough argues that such glassy systems sample the ensemble of marginal stable states, which inevitably results into critical dynamics. However, it is unclear how the marginal stability is dynamically guaranteed. We investigate this marginal stability assumption by studying specifically the critical athermal dynamics of the Sherrington-Kirkpatrick model. We discuss how a pseudo-gap in the density distribution of local fields characterizing the marginal stability arises dynamically.

Le Yan
New York Univ NYU

Date submitted: 06 Nov 2014 Electronic form version 1.4