

Part I –

Dynamical phase transitions:

Introduction & examples

Large Deviation Functions

Part II –

Evaluation of Large Deviation Functions

Population dynamics algorithm

Part III –

Application:

Dynamical heterogeneity in glass formers

Transport models

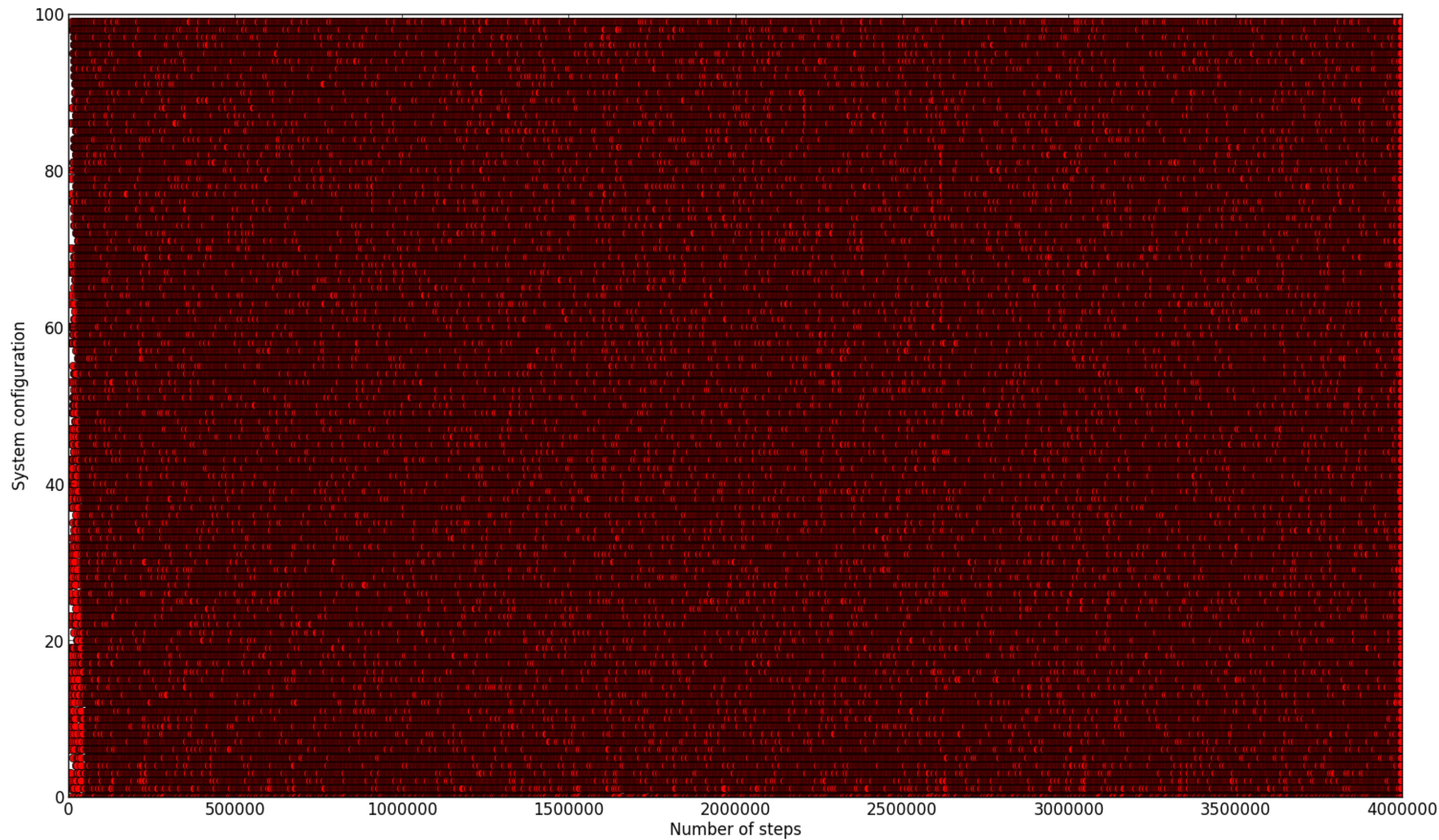
→ How to quantify the role of atypical fluctuations? ←

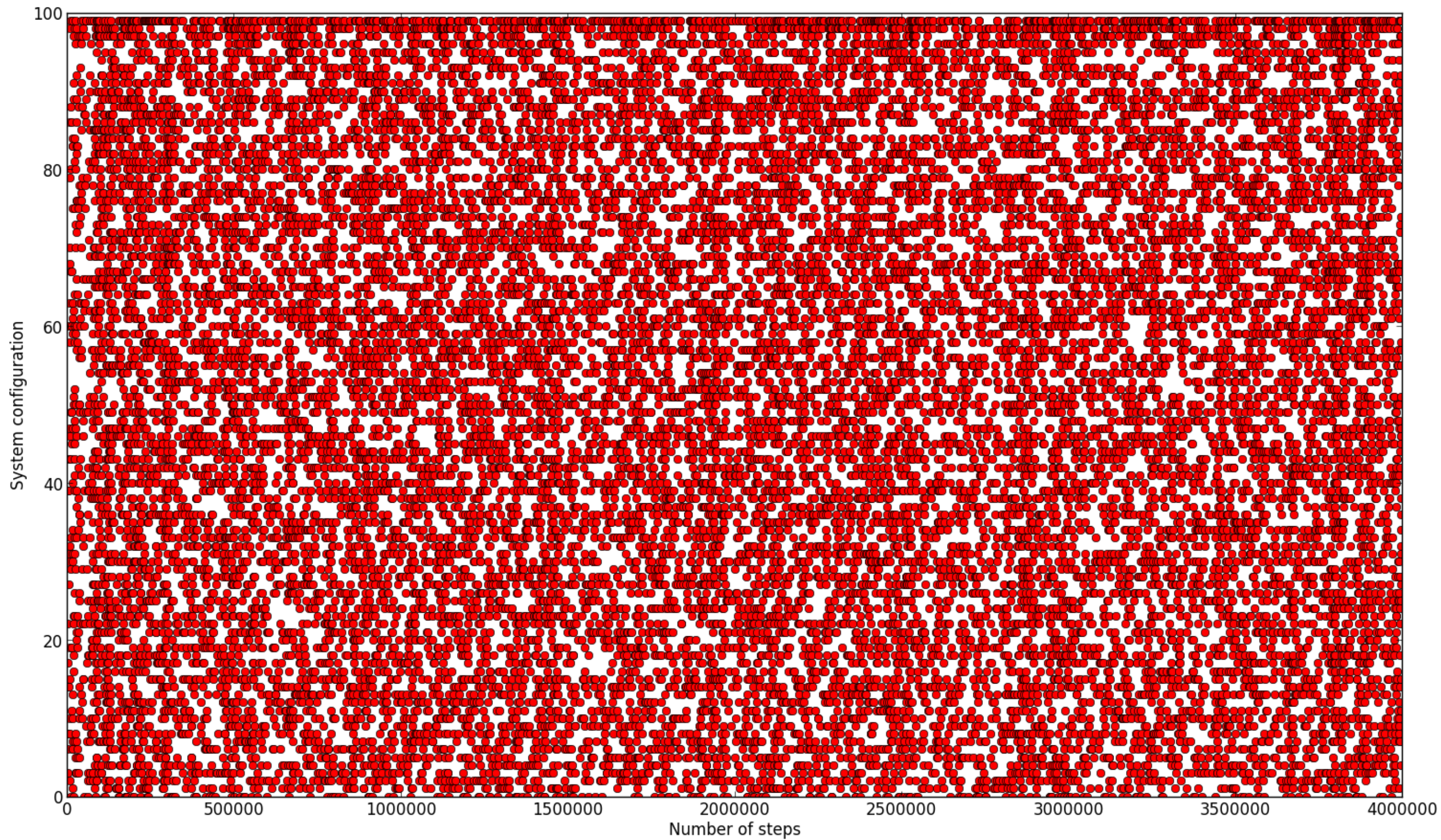
Part I –
**DYNAMICAL PHASE TRANSITIONS:
INTRODUCTION & EXAMPLES
LARGE DEVIATION FUNCTIONS**

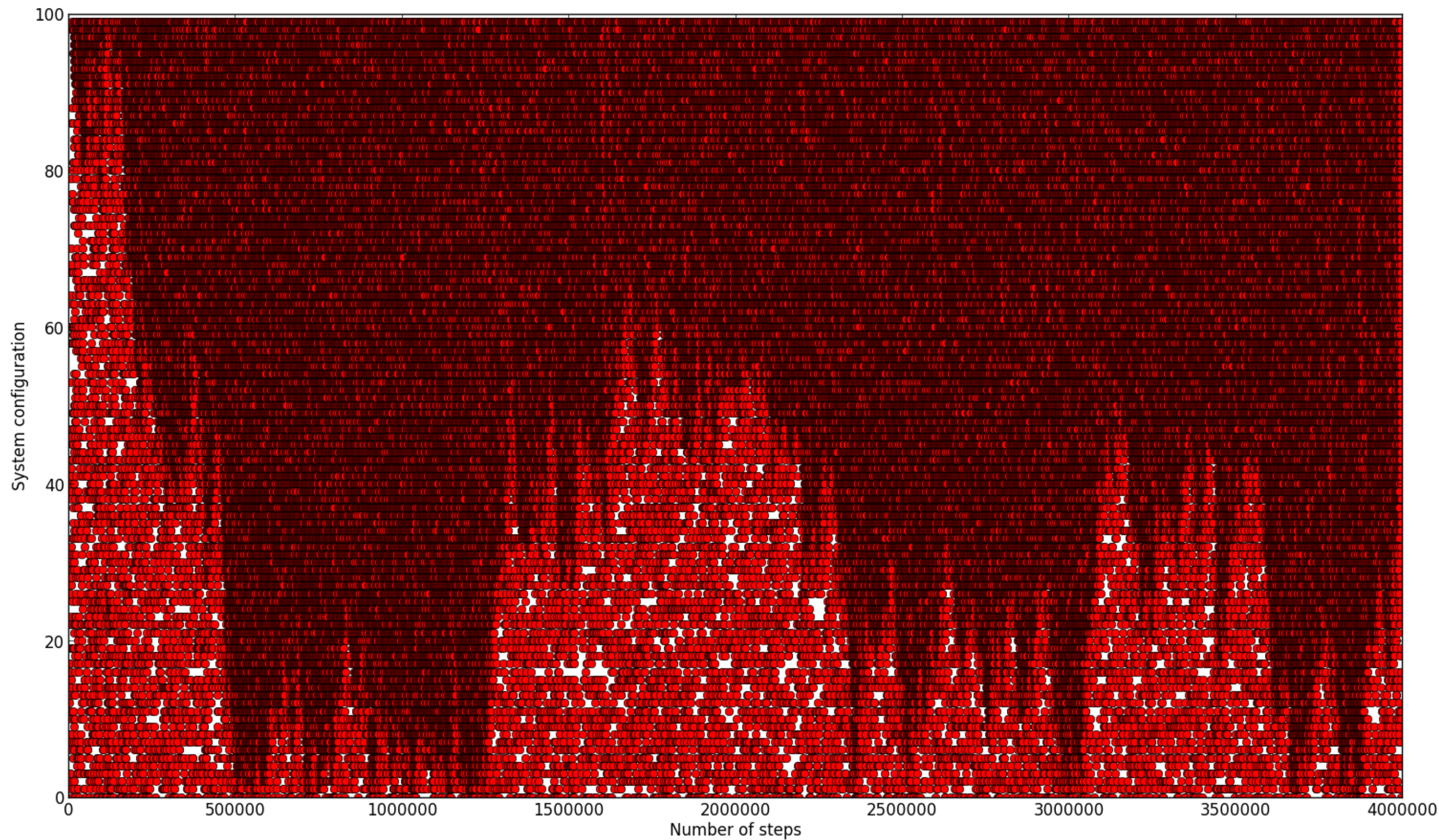
Outline:

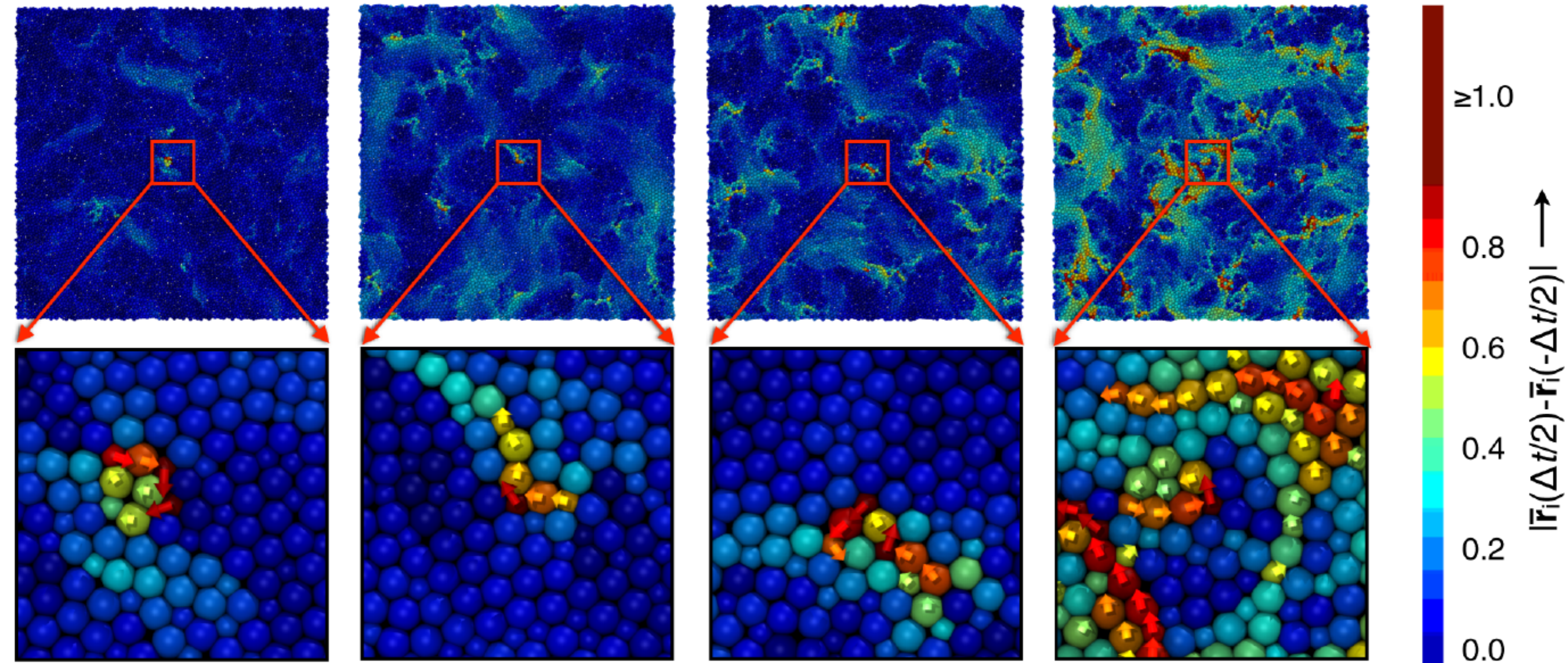
- 1- Examples of phase transitions: static & dynamical coexistence
 - 1.a Liquid-solid phase coexistence
 - 1.b 1D transport: a traffic model
 - 1.b' Coexistence between jammed and free traffic
 - 1.c Glass formers; kinetically constrained models

- 2- Fluctuations of dynamical observables ; Large Deviation Functions (LDFs)
 - 2.a Dynamical order parameters: current, activity
 - 2.b Quantitative approach: LDFs



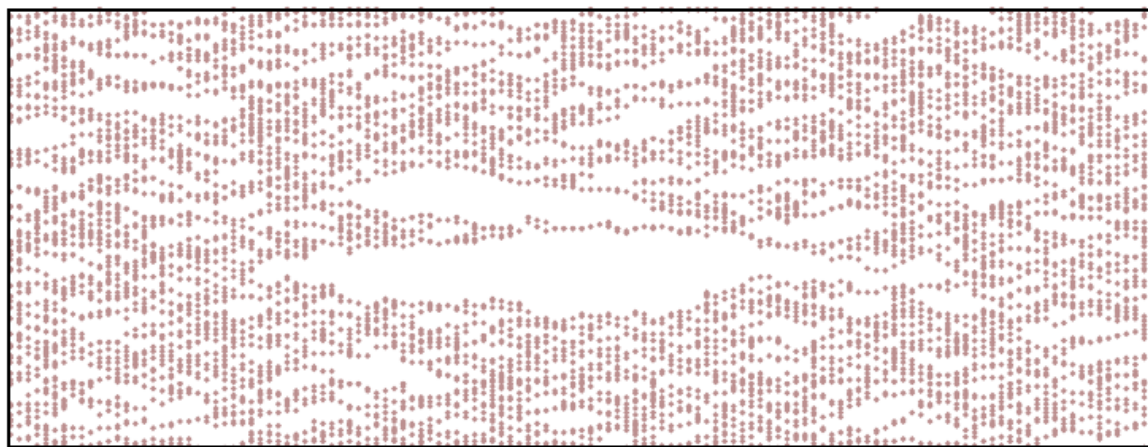




$T=0.5$ $T=1.5$ $T=1.7$ $T=T_0=2.1$ 

From: Keys *et al.*, PRX **1** 021013 (2011)

space \uparrow



time \longrightarrow

From: Merolle, Garrahan and Chandler, PNAS **102**, 10837 (2005)