

# MACROECONOMICS FOR MATHEMATICIANS

MATHEUS GRASSELLI

ABSTRACT. It is well known that the 2008 crisis exposed serious deficiencies in practice and regulation of financial markets. What is less acknowledged is that it also exposed a deeper crisis in economic theory. As the dust settles after 10 years and the urgency of the post-crisis period fades away, it is tempting to fall back into familiar modes of thinking and try to salvage the established paradigm by tinkering at the margins while preserving the core tenets of equilibrium and rationality. In this talk, I'll argue for more fundamental methodological changes, such as a serious embrace of heterogeneity, the nature of interactions between agents, the role of uncertainty, and limits to rationality. I'll give examples from agent-based models, network science, and dynamical systems that have the potential to redefine the role of quantitative methods in economics.

MCMMASTER UNIVERSITY

*E-mail address:* `grasselli@math.mcmaster.ca`