Speaker: **Juan GARRAHAN (University of Nottingham, UK)**

Title: **Circuits as a simple platform for the emergence of hydrodynamics**

While the hydrodynamic equations are arguably the most important tools for predicting large-scale behaviour in many-body systems, understanding how they emerge from microscopic deterministic dynamics is a long-standing problem (despite recent progress in integrable models). Due to the universality of hydrodynamics, the specific microscopic implementation should not matter. I will describe how classical deterministic circuits provide a minimal, exact, and efficient platform that admits non-trivial hydrodynamics for chaotic systems, and which despite their simplicity manifest a broad range of hydrodynamic behaviours, such as relaxation to Gibbs states, exact Euler equations, shocks, diffusion, and exact KPZ super-diffusion.