



## Physical Sciences Seminar

# Simulating thermalizing spin chains with matrix product density operators

**Christopher White (Caltech)**

**Host: Maksym Serbyn**

I will describe a method for approximating density operators of 1D systems called "DMT". When combined with a standard framework for time evolution (TEBD), DMT makes possible simulation of the dynamics of large thermalizing systems to long times (with computation time linear in system size and time). As a benchmark, I will apply DMT to the dynamics of the ETH random-field Heisenberg model. Time permitting, I will also discuss its application to the prethermal regime of a spin system with a high-frequency drive, where we see not only the expected slow Floquet heating but also clear diffusive hydrodynamics.

**Monday, August 19, 2019 11:00am - 11:15am**

IST Austria Campus Heinzl Seminar Room / Office Bldg West (I21.EG.101)



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.