IST AUSTRIA
Institute of Science and Technology

Institute colloquium

[Webinar] Learning physics from machine learning

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Host: Scott Waitukaitis

This Institute Colloquium will take place as a webinar. All registered participants will receive a link to join the webinar. In order to register, please fill out the **registration form**.

Big data methods such as machine learning are finding increasing applications in physics. Machine learning is now commonly used as a classification tool for distinguishing astrophysical features from observational data, to construct triggers in high energy experiments, to identify biological components such as cells in tissues, etc.. It is also used as an approximation tool for electronic structure calculations or solution of partial differential equations. However, machine learning can also be used to gain new conceptual understanding in physics. I will discuss the problems of dynamics and plasticity in glassy systems, which involve nonlinear responses in systems that are far from equilibrium and disordered, and therefore resistant to traditional statistical mechanics approaches. We have used machine learning to analyze microscopic data from simulations and experiments to identify a structural quantity that is highly correlated with dynamics in glassy systems, an identification that eluded physicists for more than 50 years. This quantity, “softness,” considerably simplifies our understanding of glassy dynamics and plasticity.

Monday, May 4, 2020 04:00pm - 05:00pm

IST Austria Campus Webinar

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.