NITheP
National Institute for Theoretical Physics

NITheP Colloquium
Monday, 8 February 2021, 16h00

Prof Morten Hjorth-Jensen | Michigan State University & University of Oslo

"Machine Learning and Quantum Mechanics for Many Interacting Particles"

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The main aim is to give you a short and pedestrian introduction to how we can use Machine Learning methods to solve quantum mechanical many-body problems. And why this could be of interest. I will focus on the link between variational methods (Variational Monte Carlo as an example) and so-called Boltzmann machines and how they can be used to solve many-body problems, as well as to give a survey on how other Deep Learning methods can be used in Physics analysis and discoveries

BIOGRAPHY

Morten Hjorth-Jensen is a theoretical physicist with a strong interest in computational physics, computational science and many-body theory in general, and the nuclear many-body problem and nuclear structure problems in particular. He studies various methods for solving either Schrödinger's equation or Dirac's equation for many interacting particles, spanning from algorithmic aspects to the mathematical properties of such methods, including machine learning and quantum computing.

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