Seminar/Talk

Continuous Matrix Product States for Non-relativistic Quantum Field Theories

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Host: Maksym Serbyn

Over the past several years, continuous Matrix Product States (cMPS) have emerged as a powerful tool for obtaining non-perturbative ground state and excited state properties of interacting quantum field theories (QFTs) in (1+1)d. At the heart of the cMPS lies an efficient parametrization of manybody wavefunctions directly in the continuum, that enables one to obtain ground states of QFTs via imaginary time evolution.
In the first part of my talk I will give a general introduction to the cMPS formalism. In the second part, I will then discuss a new method for cMPS optimization, based on energy gradient instead of the usual imaginary time evolution. This new method overcomes several problems associated with imaginary time evolution, and allows to perform calculations at much lower cost / higher accuracy than previously possible.

Tuesday, August 22, 2017 11:00am - 12:30pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
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