

Speaker: **Óscar Dueñas Sánchez, Universität Salamanca**

Title: **Introduction to Matrix Product States**

Date: **Friday, June 19, 11 am (s.t.).**

Place: **Seminar room 915**

Abstract: **Introduction to Matrix Product States**

Matrix Product States (MPS) provide an efficient representation of weakly-entangled quantum states in one-dimensional systems, allowing to study problems that would be otherwise intractable due to the exponential growth of Hilbert space with the system size. They have become a central tool in computational quantum physics, with applications ranging from ground-state calculations to the simulation of quantum dynamics. In this talk, I will introduce the basic ideas behind MPS, discuss the types of problems for which they are most effective, and present some of the fundamental algorithms usually employed.