

Il Dr.

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terrà un ciclo di tre seminari didattici  
dal titolo:

## Matrix Product States for beginners



lun 15, ven 19, lun 22 novembre  
ore 15.00, aula B, via Archirafi 36

**Codice Team:** zfm0f0i

### Abstract

The Matrix Product State (MPS) formalism is a powerful and versatile instrument used to investigate numerically the dynamics of many body quantum systems, with a lot of applications ranging from complex systems to quantum optics. It is currently one of the most used numerical methods by research groups worldwide.

In this series of three seminars, the MPS formalism and some of the main simulation techniques that rely on it will be presented.

The first seminar will present some basic concepts and motivations underlying the introduction of the MPS formalism in quantum mechanics.

The second seminar will focus on simple examples of simulation algorithms for spin chains and quantum optical systems.

Finally, the last seminar will be a tutorial to use "mpnum", a Python toolbox for the MPS formalism.