



## Milena Grifoni

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### Spin-dependent phenomena in carbon nanotubes

Carbon nanotubes are carbon-based quantum wires which carry a great potential for applications in future electronic devices. Some examples of how the spin degree of freedom directly or indirectly can influence their transport properties will be provided. In particular in the presentation it will be discussed:

- i) when spin-polarized currents can arise due to the interplay between spin-orbit interaction and a magnetic field applied to the spin axis
- ii) how spin fluctuations give rise to an effective magnetic field in carbon nanotube quantum dots coupled to ferromagnetic leads, thus leading e.g. to a negative tunnel magnetoresistance.

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