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## Quantum thermodynamics and spin polarization in boost-invariant fluid of Dirac fermions

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The spin polarisation of Dirac fermions is an important observable in the Quark Gluon Plasma (QGP), as it allows connecting an entirely quantum property to the thermodynamic gradients at the freeze-out stage. For a correct description of experimental data, non-equilibrium effects play a crucial role, but they are harder to study and involve some theoretical ambiguities. I will present exact quantum non-equilibrium calculations for a fluid of Dirac fermions undergoing Bjorken expansion, both with and without finite spin density. These results allow a better understanding of the so-called shear-induced polarisation, as well as the thermodynamic role of a spin potential, in a physically-motivated non-equilibrium scenario.

**Orateur:** PALERMO, Andrea

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