ID de Contribution: **19** Type: **Invited talk**

# Thermalization and many-body localization in systems under dynamic nuclear polarization

*mercredi 15 juin 2016 11:30 (45 minutes)*

A generic isolated quantum system has two possible fates at long times:
it thermalizes or it remains many-body localized close to its initial state. So far only few systems showing experimentally relevant consequences of many-body localization have been reported in cold atoms and in trapped ions. In this talk, we show that the phenomenon {\em is} relevant in quantum magnets, and we discuss how the two dynamical phases can affect the driven state of quantum magnets. In particular we will focus on Dynamical Nuclear Polarization - a technique used to hyperpolarize nuclear spins- and show that its efficiency strongly depends on the tendency of the interacting spins to thermalize.

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**Classification de Session:** Morning Session 2