Atelier
« Applications de la correspondance AdS/CFT à la chromodynamique quantique et en physique de la matière condensée »
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Workshop
"Applications of AdS/CFT to QCD and condensed matter physics"
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Universal entanglement and dynamics in $2+1D$ CFTs

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Conformal field theories (CFTs) describe many experimentally relevant quantum critical phase transitions, such as the ones in the $2+1D$ Ising and XY models. These theories are generally strongly interacting and lack long-lived excitations. I'll first discuss how the entanglement associated with regions having sharp corners can be used to characterize such (conformal) quantum critical systems. Second, I'll examine their equilibrium dynamical properties at finite temperature. I'll show concrete results stemming from an interdisciplinary approach combining field theory, Monte Carlo simulations, and the holographic duality. Experimental predictions will be made regarding the charge response near the superfluid-insulator transition of bosons on a lattice.

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