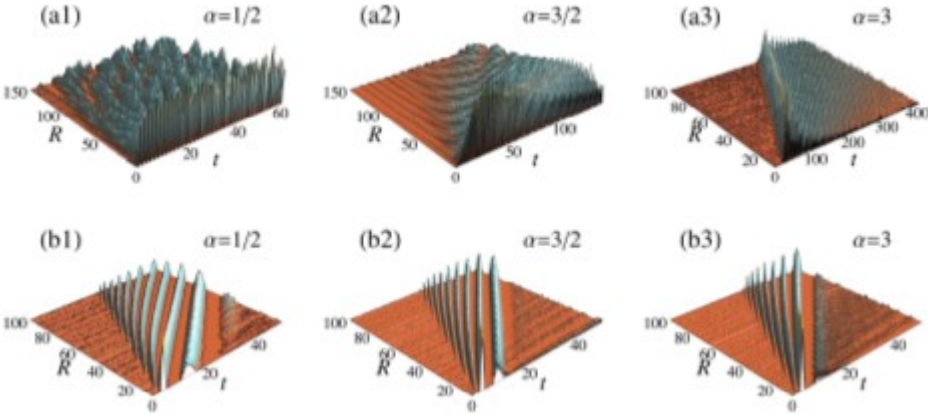


<b>Title : Correlated quantum matter and quantum dynamics</b>		
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<b>Research Area :</b> Quantum Science and Technology (primary), Condensed Matter Physics		
<b>Methods:</b> Quantum field theory, quantum information approaches, quantum Monte-Carlo		
<p><b>PhD track subject :</b> The group conducts theoretical research on the dynamics of correlated quantum systems, in connection with ultracold atom gases, quantum optics systems, and quantum simulation. Our work aims at characterizing novel quantum phases of matter and quantum phase transitions, understand quantum transport properties, and develop new theoretical approaches. The PhD track fellow will join one of the ongoing projects on either the characterization and quantum simulation of exotic quantum materials or the propagation of quantum information in correlated quantum models.</p>		
		
Causal cone of quantum correlations in spin (up) and Bose (bottom) systems (from Ref. [1])		
<b>Recent publications of the group :</b>		
[1] L. Cevolani, G. Carleo, and L. Sanchez-Palencia, Phys. Rev. A <b>92</b> , 041603(R) (2015).		
[2] G. Carleo, L. Cevolani, L. Sanchez-Palencia & M. Holzmann, Phys. Rev. X <b>7</b> , 031016 (2017).		
[3] H. Yao, D. Clement, A. Minguzzi, P. Vignolo, and L. Sanchez-Palencia, Phys. Rev. Lett. <b>121</b> , 220402 (2018).		
[4] L. Cevolani <i>et al.</i> , Phys. Rev. B <b>98</b> , 024302 (2018) [selected as Editor's suggestion].		
[5] H. Yao, H. Khouldi, L. Bresque, and L. Sanchez-Palencia, Phys. Rev. Lett. <b>123</b> , 070405 (2019).		
[6] H. Yao, T. Giamarchi, and L. Sanchez-Palencia, Phys. Rev. Lett. <b>125</b> , 060401 (2020).		
[7] J. Schneider <i>et al.</i> , Phys. Rev. Research <b>3</b> , L012022 (2021).		
[8] R. Gautier, H. Yao, and L. Sanchez-Palencia, Phys. Rev. Lett. <b>126</b> , 110401 (2021).		