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**Quench dynamics near a quantum critical point** CLAUDIA DE GRANDI, Boston University, VLADIMIR GRITSEV, University of Fribourg, ANATOLI POLKOVNIKOV, Boston University — We study the dynamical response of a system to a sudden small change of the tuning parameter starting at the quantum critical point. In particular we find the scaling laws of different physical quantities (the excitation probability, number of excited quasiparticles, heat and entropy) with the quench amplitude and the system size. We extend the analysis to quenches with arbitrary power law dependence on time, showing the close connection of these scaling laws with the scaling behavior of the fidelity susceptibility and other generalized susceptibilities. We illustrate the relevance of these results for experiments with cold atoms.

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