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Title: The Nature of criticality in Dynamical Quantum Phase Transitions

Abstract: When a quantum magnet is rapidly quenched from a high transverse magnetic field down to zero at absolute zero temperature, it exhibits first-order transitions or critical points during its time evolution—often resembling the behavior typically seen when varying temperature. Surprisingly, the only changing parameter in this process is time. This talk will explore the nature of these dynamical quantum phase transitions in the context of the transverse field Ising and Potts models utilizing exact renormalization group transformations in the appropriate complex plane.

References

1. Amina Khatun and S. M. Bhattacharjee, Phys. Rev. Lett. 123, 160603 (2019)
2. S M Bhattacharjee, Phys Rev B 109, 035130 (2024)