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Magnetothermoelectric response at a superfluid–Mott insulator transition MIRACULOUS BHASEEN, Oxford University, ANDREW GREEN, University of St Andrews, SHIVAJI SONDHI, Princeton University — We present recent results on the finite temperature magnetothermoelectric response in the vicinity of a superfluid–Mott insulator quantum phase transition [cond-mat/0610687]. We focus on the particle-hole symmetric transitions of the Bose–Hubbard model, and combine Lorentz invariance arguments with entropy drift and quantum Boltzmann calculations. Depending on the ratio of the applied fields, the model displays distinct regimes of behavior. We discuss how a non-vanishing thermoelectric tensor and a finite thermal conductivity are supported in this quantum critical regime.

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