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Thermoelectrical Transport of Quantum Critical Metals SEIJI YAMAMOTO, EUGENE PIVOVAROV, QIMIAO SI, Rice University — Motivated by recent experimental measurements of an anomalously enhanced Nernst coefficient in strongly correlated electron systems, we examine thermal and electrical transport in metals near quantum phase transitions. We consider an electronic topological transition (Lifshitz transition) to mimic exotic quantum critical points with a large Fermi-surface reconstruction, and compare it with the case of spin-density-wave (SDW) transition. In the former, we find a strong enhancement of the Nernst coefficient. Across an SDW transition, on the other hand, the Fermi surface change is too smooth to significantly affect the Nernst coefficient.

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