Thermoelectricity as a probe of non-Fermi liquid physics
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Recently, the breakdown of the Fermi liquid picture in the vicinity of a Quantum Critical Point has become a subject of special attention. In this context, I will report on recent studies of thermoelectric coefficients in a number of heavy-fermion systems. In CeCoIn$_5$, when the system presents a strong departure from the standard Fermi-liquid behavior, a giant Nernst effect and an unusually reduced Seebeck coefficient emerge. The anomalous thermoelectricity disappears with the restoration of the Fermi liquid by the application of a magnetic field. Another example of anomalous thermoelectricity is provided by the hidden-order state of URu$_2$Si$_2$ which is host to a Nernst coefficient of unprecedented magnitude. Yet another remarkable case is the behavior of CeRu$_2$Si$_2$ close to the meta-magnetic transition. I will discuss the information extracted by probing the thermoelectric response of the system in each case.