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New materials for thermoelectric applications: theory and experiment  
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**First principles calculations of thermoelectric properties of materials:  
Quo Vadis ?**

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There is increase interest in using computational and theoretical methodologies to accelerate thermoelectric materials discovery. In this talk will describe some aspects of the methodology available to evaluate the thermoelectric response based on modern electronic structure tools. Using DMFT, we will discuss the validity of simpler estimates of the thermoelectric response such as the infinite frequency limit and the Kelvin formulae. We will stress qualitative considerations that can guide the search for improved thermoelectric response in correlated electron materials. This talk will complement the much more rigorous results LDA+DMFT to be presented by Jan Tomczak.