Electronic structure calculations for correlated materials: FeAl and $CrSb_2$

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DATE / TIME: Monday, October 6th 2014, 04:00 p.m.
LOCATION: Seminar Room 138C, Vienna University of Technology, "Freihaus"- building, 9th floor, "yellow" – Wiedner Hauptstraße 8-10

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In this talk, I will review the realistic many-body approach called "LDA+DMFT" that combines density functional theory in its local density approximation with dynamical mean field theory. I will explain the merits of the theory for the examples of the intermetallics FeAl and CrSb2, two correlated materials with interesting physical properties. While FeAl has been studied because of its intriguing magnetic properties, CrSb2 might have potential as a new thermoelectric material.