TECHNISCHE UNIVERSITÄT WIEN

INSTITUT FÜR FESTKÖRPERPHYSIK
Institute of Solid State Physics

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Einladung zum Sonderseminar

des

Institut für Festkörperpyhsik

und

SFB ViCom

The fourth paradigm of materials science

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Host:	Univ.Prof. Dipl.-Phys. Dr.rer.nat. Karsten Held
Termin:	Freitag, 21. Dezember 2018, 14:30 Uhr
Ort:	Institut für Festkörperphysik, TU Wien
	Wiedner Hauptstraße 8-10, 1040 Wien
	Seminarraum DB gelb 09 (gelber Bereich, 9. OG)

The growth of data from simulations and experiments is expanding beyond a level that is addressable by established scientific methods. The so-called “4 V challenge” of Big Data –Volume (the amount of data), Variety (the heterogeneity of form and meaning of data), Velocity (the rate at which data may change or new data arrive), and Veracity (uncertainty of quality) – is clearly becoming eminent also in materials science. Controlling our data, however, sets the stage for explorations and discoveries. Novel data-analytics tools can find patterns and correlations in data that cannot be obtained from individual calculations / experiments and not even from high-throughput studies. In fact, data-driven materials research is adding a new research paradigm to our scientific landscape. I will address the concepts and recent progress of data-driven materials science, issues of error bars, the FAIR guiding principles, and the importance of Open Data.