

Vortragsankündigung

Mittwoch, 3. April 2019, 11.15 Uhr

Seminarraum I (JAK2AOG1.33), Jakob-Haringer-Straße 2a

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“Topics in Philosophy of Physics: Emergence and reduction in condensed matter physics”

The topic of emergence and reduction is nowadays an important area of research in both physics and philosophy. The reason for this is related with recent developments in a number of successful research programs within physics. For example, the physical treatment of phase transitions and the phenomenon of symmetry breaking in condensed matter physics have encouraged us to rethink the relationship between complex entities and their parts as well as the relationship between different theories. In this presentation, I will examine different case studies from condensed matter physics addressing the following questions: To what extent should they be considered as instances of emergent behavior? Do they pose a challenge for reductionism, i.e. the idea that ultimately all macroscopic laws will be reduced to the fundamental laws of physics? How can they improve our understanding of the mutual relationship between different notions of reduction and emergence?