Symposium Interaction Effects and Correlations in twodimensional Systems - New Challenges for Theory (SYTS)

jointly organized by
the Semiconductor Physics Division (HL),
the Thin Films Division (DS), and
the Magnetism Division (MA)

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The recent theoretical description of low-dimensional solids has been focussing on two-dimensional materials like graphene and the transition metal dichalcogenides. These atomically thin materials bear new challenges for theory because of their material properties, a true two-dimensionality and a high sensitivity to their surrounding. In particular the interaction and correlation effects are fundamentally different from well-established materials. This symposium brings together world-leading theorists to present and exchange ideas about various state-of-the-art methods to foster the research on 2D materials, which will be necessary to understand and guide experiments in this field.

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYTS 1.1	Wed	15:00–15:30	H1	**Spectra of layered semiconductors from many-body perturbation theory** — Thorsten Deilmann, Peter Krüger, Philipp Marauhn, •Michael Rohlfing
SYTS 1.2	Wed	15:30–16:00	H1	**Dark exciton dynamics in 2D materials** — •Ermin Malic
SYTS 1.3	Wed	16:00–16:30	H1	**Excitons versus electron-hole plasma in monolayer transition metal dichalcogenide semiconductors** — •Alexander Steinhoff, Matthias Florian, Malte Rösner, Gunnar Schönhoff, Tim O. Wehling, Frank Jahnke
SYTS 1.4	Wed	16:45–17:15	H1	**Theory of near K-point optical properties of TMDC multilayers** — •Tineke Stroucken, Lars Meckbach, Ulrich Huttner, Stephan W. Koch
SYTS 1.5	Wed	17:15–17:45	H1	**High-throughput modeling and discovery of novel 2D materials** — •Kristian Thygesen

Sessions

SYTS 1.1–1.5	Wed	15:00–17:45	H1	**Interaction effects and correlations in twodimensional systems - New challenges for theory**