Physikalisches Kolloquium **Physics Colloquium**

Einladung **Invitation**

Monday, 14 June 2021

Format: Online via Zoom, at 16:15

The Magic of Atomically Thin Crystals

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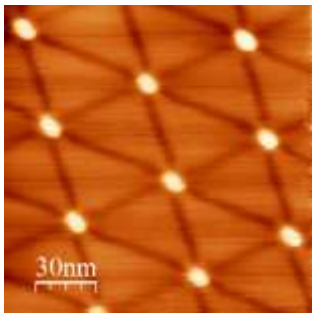
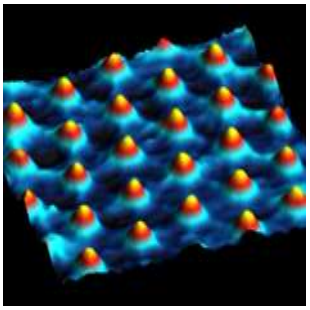
Once in a while, an invention comes along that opens up uncharted paths of inquiry. Starting in 2005 with the discovery of graphene and followed up with dozens in the van der Waals family of compounds, the discovery that it is possible to create and manipulate atomically thin crystals, has changed the way we think about materials. This new class of materials is making it possible to design, tune, and control electronic properties without changing chemical composition, through alternative means such as superposing different layers, misaligning them, inducing strain, etc. In this talk I will describe highlights from this rapidly evolving field, from its serendipitous inception, to the use of twisted or buckled layers to engineer flat electronic bands with non-trivial topology that enable the emergence of novel correlated electronic phases.



Twisted bilayer graphene visualized with STM



Buckled graphene layer visualized with STM

Host: Prof. Dr. Ute Kaiser, Electron Microscopy Group of Materials Science

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