

## PHYSIKALISCHES KOLLOQUIUM

### Sommersemester 2021

Das Kolloquium findet (soweit unten nicht anders angegeben) jeweils montags **jeweils montags um 17:15 Uhr online via Zoom** statt.

(Der jeweilige Link wird noch zur Verfügung gestellt.).

**07 Juni 2021**

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Caltech & Kavli IPMU

#### **Constraints on Quantum Gravity**

##### **Abstract**

Although predictions of quantum gravity are typically at extremely high energy, several non-trivial constraints on its low energy effective theory have been found over the last decade or so. I will start by explaining why the unification of general relativity and quantum mechanics has been difficult. After introducing the holographic principle as our guide to the unification, I will discuss its use in finding constraints on symmetry in quantum gravity. I will also discuss other conjectural constraints on low energy effective theories, collectively called swampland conditions, and their consequences.

Für die Dozentinnen bzw. Dozenten der Fakultät

Prof. Dr. Hankiewicz, Prof Dr. Höfling, PD. Dr. Meyer, Prof Dr. Sing und Hr. Frerichs