

# DIESE WOCH

## PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik  
der Johann Wolfgang Goethe-Universität Frankfurt

Mittwoch, den 18.12.2013, 16 Uhr c.t.  
Großer Hörsaal, Raum \_0.111,  
Max-von-Laue-Str. 1

**PD Dr. Piero Nicolini**  
Frankfurt Institute for Advanced Studies (FIAS),  
Frankfurt am Main

### *„Journey to the shortest scale“*

By combining arguments from quantum mechanics and the theory of gravitation we present the concept of fundamental length, namely the shortest physically meaningful length scale in the Universe.

We also discuss a variety of Gedankenexperimente that can underline the necessity of a fundamental length and uncover the inadequacy of standard quantum mechanics in the extreme high energy regime.

Finally we offer a brief overview of possible repercussions. We discuss some experimental arenas in which evidences of a fundamental length are expected despite the difficulties one conventionally encounters to probing such extremely small distances.

Die Dozenten der Physik

# Kolloquium