



# PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik  
der Johann Wolfgang Goethe-Universität Frankfurt

Mittwoch, den 31.05.2023, 16 Uhr c.t.  
Großer Hörsaal, Raum \_0.111,  
Max-von-Laue-Str. 1



## Dr. Harald Lück

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Max-Planck Institut für Gravitationsphysik  
und  
Institut für Gravitationsphysik  
der Leibniz Universität Hannover

### **"The next generation of ground based gravitational wave observatories"**

The current "advanced" generation of gravitational wave detectors has completed an impressive series of observational runs in recent years, and will have started another data run by the time of the talk. However, the sensitivity of today's detectors, impressive as it is, only allows us to eavesdrop on sources in our cosmic neighbourhood, and not yet with sufficient precision to study the underlying physical processes in detail.

With the Einstein telescope and the Cosmic Explorer, the next generation of gravitational wave detectors is being planned. These detectors will be an order of magnitude more sensitive and extend to lower frequencies, opening up new areas and looking back to the early times after the Big Bang. This talk will give an overview of the possibilities, the plans and the difficulties to achieve this.

Die Dozentinnen und Dozenten der Physik

local host: Prof. Dr. Rezzolla | rezzolla@itp.uni-frankfurt.de