

H a b i l i t a t i o n

Freie Universität Berlin

Fachbereich Physik

Arnimallee 14, 14195 Berlin (Dahlem), Hörsaal A (1.3.14)

Im Zuge ihres Habilitationsverfahrens wird

Frau Dr. Ivelina Zaharieva

FUB

am **Freitag, d. 9. Dezember 2016** um **15.15 Uhr**

ihren öffentlichen wissenschaftlichen Vortrag über

das Thema:

„Holograms with sound“

halten.

Anschließend findet vor Mitgliedern des Fachbereichsrats und den Mitgliedern der Habilitationskommission eine Aussprache statt.

Vorsitzender der Habilitationskommission

In holography, measurements of a wave field are made on a two-dimensional surfaces, and then used to calculate the complete wave field in three-dimensional space. It can be applied both not only to electromagnetic but also to acoustic waves. In principle, the acoustic holography can be used to control acoustic fields within a three-dimensional volume, which allows for controlled movement of small particles in liquids or in gas phase, fabrication of small objects or manipulation of levitated objects. Although the principle of acoustic holograms is known for several decades, its application is hindered by the requirement to use simultaneously many independent sound sources. Recently a breakthrough has been achieved in the acoustic holography by fabricating monolithic acoustic holograms, which can reconstruct diffraction-limited acoustic pressure fields (Melde et al., Nature, September 22, 2016). During the lecture, the basic principles behind the acoustic holography and its fields of application will be discussed.