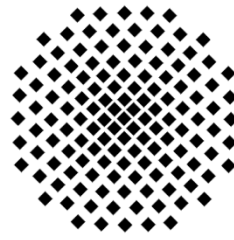


# Stuttgarter Physikalisches Kolloquium

Fachbereich Physik, Universität Stuttgart  
Max-Planck-Institut für Festkörperforschung  
Max-Planck-Institut für Intelligente Systeme

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**Dienstag, 20. Dezember 2022**

**16:15 Uhr**

**V57.01**

**Universität Stuttgart, Pfaffenwaldring 57, 70569 Stuttgart-Vaihingen**

Gastgeber: Prof. Dr. Thomas Speck, Universität Stuttgart, Telefon: 0711 - 685-65248

## Human respiratory drops and aerosols: Why face masks work

**Eberhard Bodenschatz**  
*MPI Göttingen*

### Abstract

COVID-19 and other airborne diseases are transmitted to healthy individuals through the inhalation of pathogen-containing particles exhaled by infectious individuals. I will provide an overview of the physics involved in the formation of these particles and the effects of social distancing and masking on transmission risk. I will present the results of our experimental study characterizing the size distribution of exhaled particles across the particle spectrum of human droplets and aerosols from nanometers to millimeters. This allows us to establish an upper bound on the transmission risk for SARS-CoV-2 from one-to-one exposure. I will demonstrate that wearing appropriate masks in the community provides excellent protection for others and oneself and eliminates the need for social distancing.