



JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

FALL 2021 CEAFM VIRTUAL SEMINAR SERIES

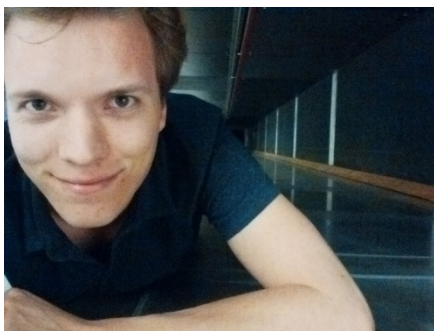
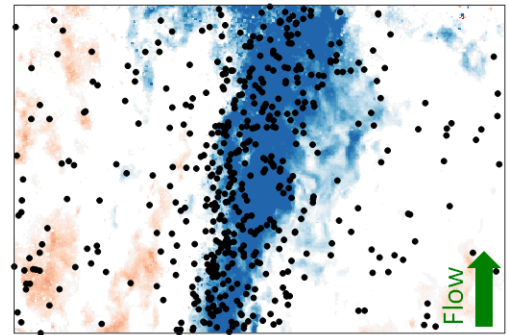
“Dynamics of Small Heavy Particles in High-Reynolds-Number Turbulence”

Presented by Dr. Tim Berk
Johns Hopkins University

Department of Mechanical Engineering

Hosted by Rui Ni (MechE)

Small inertial particles in turbulence appear in a number of environmental flows such as dust, sand, rain, snow or sediment in the atmospheric boundary layer, in rivers, during deep-sea mining or on Mars. The behavior of these particles depends (among other things) on gravity and inertia. In this talk I will present results of recent experiments of inertial particles in turbulence which are performed in a turbulence box ($Re_\lambda = 450$) and an atmospheric boundary layer wind tunnel ($Re_\tau = 19,000$). These results are of direct use in prediction and modeling of phenomena such as droplet growth in clouds, fall speed of snowflakes and particle concentrations in dust storms.



Tim Berk is a Postdoctoral Scholar working with Prof. Rui Ni in the Mechanical Engineering department. Before coming to Johns Hopkins in June, he completed a postdoctoral position with Prof. Filippo Coletti at the University of Minnesota. He received his Ph.D. in Experimental Fluid Dynamics from the University of Southampton in 2018 and M.Sc. in both Mechanical Engineering and Sustainable Energy Technology from the University of Twente in 2014. During his Ph.D., Tim performed experiments in state-of-the-art facilities at both

the University of Toronto and the University of Melbourne. His research interests include various problems related to turbulent flows, which he studies using optical experiments in a range of facilities at different scales.

Friday, September 10, 2021 at 3:00 PM

<https://wse.zoom.us/j/93762992307>