

## Second announcement

### Scope

Extreme viscous dissipation rates are critical in many industrial, environmental and astrophysical processes dominated by small-scale turbulence. Despite its importance, there is no suitable theory to explain the Reynolds number scaling of the dissipation PDF, its variance and extremes. Any successful new theory will need to properly account for the intermittency and the development of turbulent flow structures at high Reynolds numbers. However, connecting the recent understanding of turbulent flow structure with the prediction of dissipation extrema in real industrial, environmental and astrophysical applications remains a significant challenge and opportunity.

The aim of this colloquium is to bring together scientists from different disciplines (fluid mechanics, turbulence, combustion, atmospheric and oceanic sciences, astrophysics) to discuss the key questions confronting the field. These will include:

- What are the turbulent flow structures relevant to dissipation and how do they depend on the Reynolds number?
- How do these insights in flow structure lead to new theories for the dissipation extremes? And how do these theoretical predictions compare to the available data?
- What are the implications of extreme dissipation and intermittency for turbulent dispersion, combustion, atmospheric studies and astrophysics? And what are the open issues?

### Organizers

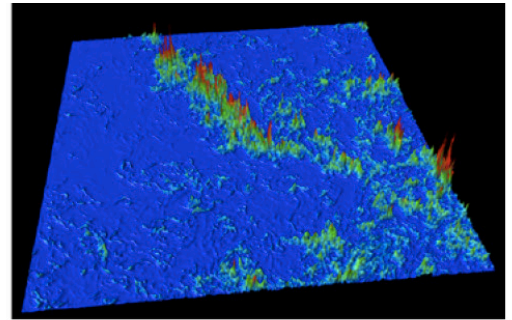
Gerrit Elsinga – Delft University of Technology  
Julian Hunt – University College London

### Website

<https://euromech.org/colloquia/colloquia-2021/620>

### Contact

[g.e.elsinga@tudelft.nl](mailto:g.e.elsinga@tudelft.nl)



### Invited speakers (confirmed)

Luca Biferale (Tor Vergata, Rome)  
Bérengère Dubrulle (U Paris-Saclay, CNRS)  
Takashi Ishihara (Okayama University)  
Eliezer Kit (Tel Aviv University)  
Alain Pumir (ENS de Lyon, CNRS)  
P.K Yeung (Georgia Tech)

### Time schedule

One-page abstract submission deadline: March 15, 2021  
Notification of acceptance: April 14, 2021  
Program announced: May 1, 2021

### Abstract submission

#### & Registration (free):

[extremedissipation-3ME@tudelft.nl](mailto:extremedissipation-3ME@tudelft.nl)

