



Contribution ID: 6

Type: **Lecture Talk**

## **Compression of partial differential operators by numerical homogenization**

*Thursday, May 12, 2022 11:30 AM (1 hour)*

Numerical homogenization is a methodology for the computational solution of multiscale partial differential equations. It aims at the compression of the corresponding partial differential operators to finite-dimensional sparse surrogate models. The surrogates are valid on a given target scale of interest, thereby accounting for the impact of features on under-resolved scales. This talk shows how to construct such surrogates by localized orthogonal decompositions and discusses the underlying mathematics as well as applications to random diffusion and Schrödinger operators.

**Primary author:** PETERSEIM, Daniel (University of Augsburg)

**Presenter:** PETERSEIM, Daniel (University of Augsburg)

**Session Classification:** Lecture talk