



Distinguished Lecture Series

Learning Better Discretizations for Singular Variational Problems



21 April 2021 (Wednesday)
4:00-5:00 p.m. GMT+8 (Hong Kong Time)



Online via Zoom
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ABSTRACT

The total variation has been promoted for a long time as a regularizer for inverse problems in imaging, thanks to its ability to recover sharp edges and smooth regions. Yet, there are millions of different ways to represent it in a discrete form, yielding to quite different behaviours (sometimes desirable or not, depending on the application). In this talk, we will describe a few variants, their advantages and drawbacks, and how one can numerically "learn" improved discretizations with better precision, sharper results and good isotropy properties. This is based on joint works with Thomas Pock, TU. Graz.

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Professor Antonin Chambolle

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Antonin Chambolle specializes in analysis, numerical analysis and optimization of non-regular variational problems, with applications in image and data processing or in mechanics. From 2003 to 2020, he was a member of the CMAP, Center for Applied Mathematics, UMR7641 of the CNRS at the École polytechnique (Palaiseau). He chaired CMAP from 2009 to 2015, then, after a year spent as "French Government Fellow" at Churchill College, Cambridge and at the Cambridge Image Analysis group of Cambridge University, he until 2020 was Chairman of the Scientific Council of the Gaspard Monge Program for Optimization and Operational Research (PGMO, Jacques Hadamard Mathematical Foundation), and in 2019-2020 Deputy Director of the Hadamard Mathematical Doctoral School (EDMH). He has been a member of CEREMADE since September 2020.