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Mathematical issues hiding behind image processing problems

Abstract
The important role of the mathematics in general, and of the numerical analysis in the specific, which is hiding behind applications is well-known.
In this talk, we focus on the numerical resolution of partial differential equations in the context of Image Processing for a couple of problems: some issues related to 3D printing of an object, additional to those already present for its 3D reconstruction (in particular how to build object-dependent infill structures for saving material while keeping the desired rigidity and printable features), and the proposal of a new numerical scheme for the game p-Laplacian, based on a semi-Lagrangian approximation, for solving the so-called inpainting problem, which consists in reconstructing one or more missing parts of an image using information taken from the known part.