

A uniqueness theorem and its applications in discrete tomography

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Abstract:

Discrete tomography deals with the reconstruction of the internal of an object by means of its projections, taken along given directions. Such an inverse problem is ill-posed in general, so one of the main research lines in tomography looks for conditions ensuring uniqueness of reconstruction, or at least lowering the number of allowed solutions.

In this talk, moving from a uniqueness result for binary objects due to Brunetti et al. (2013), I will show how to exploit the structure of the ambiguities in order to get a reconstruction algorithm which can be employed in more practical environments.

This is a joint work with P. Dulio (Politecnico di Milano).

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