MEETING ON TOMOGRAPHY AND APPLICATIONS

MATHEMATICS DEPARTMENT, POLITECNICO DI MILANO

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On the structure of global dependencies

ABSTRACT In discrete tomography there is redundancy in the data. For example, the sum of the line sums in one direction is equal to the sum of the line sums in another direction. A dependency is called global if it is valid for all objects. The global dependencies form a linear space. In 2007 Van Dalen made a conjecture on the rank of the space of the global dependencies and a more precise one on the rank of the space of the global dependencies of a given power. Van Dalen proved both conjectures in case of at most four given directions. The former conjecture was proved for any number of directions by Stolk and Batenburg in 2010. The second is still open. In the lecture we discuss the progress with respect to the second conjecture.

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