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İSTANBUL DISCRETE MATHEMATICS MEETINGS

# ON THE USE OF GRAPHS IN DISCRETE TOMOGRAPHY

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## **Abstract**

Tomography deals with the reconstruction of an object from its projections in given directions. While these projections are uniquely defined, this is not necessarily the case for the underlying object or it may not exist at all. Tomography has its main application in medical imagery but there are lots of other areas in which tomography plays an important role, for example in crystallography, data compression, pattern recognition or electron microscopy. In discrete tomography, the object to be reconstructed can be expressed using a discrete set of data. One of the most famous problems in discrete tomography is the reconstruction problem of 2-dimensional images from two projections. In this talk, we will show how graph theory can help modeling these problems and solving some of them.

**Date :** Friday, March 2, 2012

**Time:** 11:00

**Place:** IMBM Seminar Room, Boğaziçi University