



 ТрансТелеком

Annual Workshop

Coding Theory and Applications

Blagoevgrad, Bulgaria 2006

ABSTRACTS

PREFACE

The Annual Workshop on Coding Theory and Applications is organized by the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences. It was held in Bachinovo, near to Blagoevgrad, from November 30 to December 3, 2006.

The Workshop is supported by Trans Telecom and the Bulgarian NSF under contracts No MM-1405 and I-1301.

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Bounds on inner products of spherical designs

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We use polynomial methods for investigation of the smallest and largest inner product of spherical designs. Our approach can be used for large variety of parameters (dimension, cardinality, strength). We obtain new upper bounds for the largest inner product and lower bounds for the smallest inner products. The bounds depend on the dimension, cardinality and the strength but not on the specific points of the design.

Optimization problems in coding theory

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An overview on some of the main optimization problems about unrestricted block codes, linear codes, covering radius of codes and codes on Euclidean spheres will be presented.