

Oberseminar Theoretische Informatik
Sommersemester 2010

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Algorithmic Aspects of Golomb Ruler Construction

Mo. 17.05.2010 um 14:00 (c.t.) im Seminarraum 3319 (Ernst-Abbe-Platz 2,
3. Stock).

We consider Golomb Rulers and their construction. Common rulers feature marks at every unit measure, distances can often be measured with numerous pairs of marks. On Golomb Rulers, for every distance there are at most two marks measuring it. The construction of optimal—with respect to shortest length for given number of marks or maximum number of marks for given length—is nontrivial, various problems regarding this are NP-complete. We give a simplified hardness proof for one of them. We give a hypergraph characterization of rulers and Golomb Rulers and illuminate their structural properties. They give rise to a problem kernel in a fixed-parameter approach to a construction problem.

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