Institut für Analysis und Zahlentheorie

Zahlentheoretisches Kolloquium

15.10.2021, 14 Uhr

Seminarraum Analysis-Zahlentheorie, Kopernikusgasse 24, 2.OG

Problems in directional discrepancy

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The discrepancy of a point set in the unit cube provides a measure of how well-distributed the point set is. However, precise behavior of the discrepancy strongly depends on the properties of the underlying collection of geometric test sets. In two dimensions, the discrepancy with respect to axis-parallel rectangles and rectangles rotated in arbitrary directions is well-understood. The increased complexity of the latter collection leads to discrepancy bounds of polynomial order, in contrast to logarithmic order in the axis-parallel case. In this talk we will examine the quot;in betweenquot; and study what happens when we restrict the allowed set of rotations to a smaller interval. We will also briefly touch on some known bounds for even sparser classes of allowed rotations such as infinite sequences.

R. Matzke