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Dmitriy Bilyk* (bilyk@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *Dyadic analysis in discrepancy theory.*

Discrepancy theory has been utilizing the methods of dyadic analysis essentially since the area emerged. In this talk we shall give a brief overview of the well known ideas in this topic as well as more recent advances, in which the dyadic harmonic analysis is used both to prove uniform lower bounds on the discrepancy in various spaces (L^∞ , $\exp(L^\alpha)$, BMO) and to construct point sets with asymptotically small discrepancy. Part of this talk is joint work with M. Lacey, I. Parissis, A. Vagharshakyan. (Received February 23, 2010)