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*Irregularity of Distributions and Multiparameter  $A_p$  Weights.*

Roth and Schmidt's seminal result in distribution theory, giving lower bounds on the  $L^p$  norm of the "discrepancy function" (measuring, for a collection of points in the unit cube, the discrepancy between the actual and expected number of points in a rectangle with one corner at the origin), is shown via weighted multiparameter Littlewood-Paley theory to be extendable to the case where the measure is a product Muckenhoupt  $A_p$  weight. (Received January 12, 2011)