

1020-37-105

**Alexander Fish\*** (afish@math.huji.ac.il). *WM sets - definitions, Ramsey properties and open problems.*

The notion of WM sets was introduced by H. Furstenberg and it generalizes the notion of normal sets (subsets of the natural numbers with a statistics of normal infinite binary sequences). The definition uses the notions of genericity and weak-mixing from ergodic theory. We expect that WM sets behave like random sets. By Ramsey theory of WM sets we mean that many algebraic patterns must intersect with every WM set. In this spirit we characterize all linear diophantine systems which are solvable in every WM set. In addition we prove an additive analog of polynomial multiple recurrence theorem for WM sets. If time will permit we will review open problems related to Ramsey theory of WM sets. (Received August 21, 2006)