

1056-05-905

**John H. Johnson\*** (john.j.jr@gmail.com). *C-sets in an uncountable semigroup*. Preliminary report.

A linear homogeneous system of equations (with rational coefficients) is called *partition regular* if whenever the natural numbers are partitioned into finitely many classes, at least one of the cells contains a solution to the system. Central subsets of  $\mathbb{N}$  contains solutions to every partition regular linear homogeneous system. This particular result follows from the Central Sets Theorem. Central sets and the Central Sets Theorem have been generalized to arbitrary semigroups. In order better to focus on the consequences of the Central Sets Theorem, the point-of-view is shifted to *C-sets*. *C-sets* are sets that satisfy the conclusion of the Central Sets Theorem. Hindman and Strauss recently obtained three simple characterizations of *C-sets*. With the additional assumption that the underlying semigroup is countable, they proved four characterizations. This talk will show that this countability assumption cannot be dropped. (Received September 18, 2009)