1047-37-439   **Nikos Frantzikinakis*** (`frantzikinakis@gmail.com`), University of Memphis, Department of mathematics, Memphis, TN 38152. *Hardy field configurations on dense subsets of the integers.*

We are going to discuss several new results related to what kind of patterns one can always find within sets of integers with positive density. For example if a(t) is a function of polynomial growth that belongs to some Hardy field, then it turns out that if a(t) is not a polynomial one can always find arithmetic progressions with common difference of the form [a(n)]. This is partly joint work with M. Wierdl. (Received February 03, 2009)