

1112-05-222

**Murong Xu\*** (xumurong@math.wvu.edu), Department of Mathematics, Morgantown, WV 26506-6310, **Jiangxu Kong** (kongjiangxu@163.com), School of Mathematical Science, Xiamen University, Xiamen, 361005, Peoples Rep of China, and **Hong-Jian Lai** (hjlai@math.wvu.edu), Department of Mathematics, West Virginia University, Morgantown, WV 26506-6310. *On linear  $r$ -hued colorings of sparse graphs.*

For positive integers  $k$  and  $r$ , a  $(k, r)$ -coloring is a proper  $k$ -coloring  $c$  of  $G$  such that  $|c(N(v))| \geq \min\{d(v), r\}$  for any  $v \in V(G)$ ; and such a coloring is linear if for every pair of distinct colors, the color classes induce a linear forest of  $G$ , (that is a subgraph with maximum degree at most 2). The linear  $r$ -hued chromatic number of  $G$ , denoted by  $\chi_r^\ell(G)$ , is the smallest integer  $k$  such that  $G$  has a linear  $(k, r)$ -coloring. We will present some of the recently achieved results on linear  $r$ -hued colorings of graphs. (Received August 11, 2015)