Jiangxu Kong, Hong-Jian Lai and Murong Xu* (xumurong@math.wvu.edu), West Virginia University, Dept. of Math 320 Armstrong, P.O. Box 6310, 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 liner $r$-hued chromatic number of $G$, denoted by $\chi^r_c(G)$, 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 July 30, 2015)