(k, j)-colorability of sparse graphs

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A graph G is called *improperly* $(d_1, \ldots, d_k)$*-colorable*, or just $(d_1, \ldots, d_k)$-*colorable*, if the vertex set of G can be partitioned into subsets $V_1, \ldots, V_k$ such that the graph $G[V_i]$ induced by the vertices of V_i has maximum degree at most d_i for all $1 \leq i \leq k$. This notion generalizes those of proper k-coloring (when $d_1 = \ldots = d_k = 0$) and d-improper k-coloring (when $d_1 = \ldots = d_k = d \geq 1$). In this talk we will present obtained results concerning the (k, j)-colorability for sparse graphs.