If $S = (s_1, s_2, \ldots, s_r)$ is a non-decreasing sequence of positive integers, then an $S$-packing coloring of a graph $G$ is a partition $(V_1, V_2, \ldots, V_r)$ of the vertex set of $G$ such that the distance in $G$ between each pair of distinct vertices from $V_i$ is at least $s_i + 1$. The smallest $k$ such that $G$ has a $(1, 2, \ldots, k)$-packing coloring is the packing chromatic number of $G$. The packing chromatic number was introduced by Goddard et al. in 2008 [1] under the name broadcast chromatic number. Since that time a number of papers on the packing chromatic number have been published - in particular, concerning its value on trees, subcubic graphs, various lattices and other infinite graphs.

In this talk we survey some of what has been done on the packing chromatic number and present recent results on how local operations on a graph affect its packing chromatic number. In addition we will report on some recent work regarding the packing chromatic number of the subdivision of subcubic graphs as well as relationships between the packing chromatic number, the chromatic number and the clique number of a graph.

The recent work is joint with Boštjan Brešar, Sandi Klavžar and Kirsti Wash.

Keywords: packing coloring, subdivision, subcubic graph.

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References