1035-05-287 **Vitaly Voloshin*** (`vvoloshin@troy.edu`), Department of Mathematics and Physics, Troy University, Troy, AL. *Recent results and open problems in mixed hypergraph coloring.*

Mixed hypergraphs are the hypergraphs with two types of edges. In a proper vertex coloring, the edges of the first type must not be monochromatic, while the edges of the second type must not be completely multicolored. Though the first condition just means 'classical' hypergraph coloring, its combination with the second one brings many new properties to the coloring theory. For example, hypergraphs occur that are uncolorable, or that admit colorings with certain numbers k and l of colors but no colorings with exactly i colors for any $k < i < l$, or hypergraphs having precisely one feasible partition, etc. Especially interesting are planar mixed hypergraphs having colorings with precisely 2 and 4 colors but no coloring using 3 colors.

We survey most recent results and some open problems in this direction. It is the joint work with Zsolt Tuza. (Received September 01, 2007)