1146-05-275 **Vitaly Voloshin*** (vvoloshin@troy.edu), 600 Universiity Avenue, Troy University, Department of Mathematics, Troy, AL 36082. *Colorability problem in mixed hypergraphs: a survey.*

Mixed hypergraph is a triple $\mathcal{H} = (X, \mathcal{C}, \mathcal{D})$ where X is a vertex set, and $\mathcal{C}$ and $\mathcal{D}$ are two families of subsets called $\mathcal{C}$-edges and $\mathcal{D}$-edges respectively. A coloring of vertices is called proper if in every $\mathcal{C}$-edge there are two vertices of a Common color, and in every $\mathcal{D}$-edge there are two vertices of Distinct colors. Mixed hypergraph is called colorable if it admits at least one proper coloring and it is called uncolorable otherwise.

Colorability problem consists in determining if a mixed hypergraph from some class is colorable. We provide a brief survey of the results and some open problems in this area for mixed hypergraphs derived from different set systems like planar graphs, multigraphs, block designs, etc. (Received January 29, 2019)