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Graph and digraph classes arising from list homomorphism problems

The dichotomy of list homomorphism problems for graphs is well-understood. In particular, we understand exactly the graphs for which list homomorphism problems are polynomial time solvable. These include several well-studied graph classes. However, the digraphs which define the dichotomy of list homomorphism problems for digraphs are not completely comprehended. We exhibit several classes of digraphs which share a common forbidden structure and for which the list homomorphism problems are polynomial time solvable. Surprisingly, the forbidden structure gives rise to beautiful bipartite analogue of the classical comparability graphs. This contains joint work with Hell, Feder, Lin, McConnell, and Rafiey.