

# COMBINATORIAL STRUCTURES THROUGH ALGEBRAIC LENSES

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ABSTRACT. We survey through a number of recent studies in which algebraic methods and techniques are used to investigate combinatorial invariants and structures. In particular, we shall discuss algebraic algorithms to compute the chromatic number of a (hyper)graph, to detect the existence of induced odd cycles, perfect graphs, and to study the packing and max-flow-min-cut property in integer linear programming