

# Polyhedra associated with relation Gelfand-Tsetlin modules.

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The class of relation Gelfand–Tsetlin modules for  $\mathfrak{gl}_n$  is determined by some special directed graphs and Gelfand-Tsetlin characters. In this talk we discuss the construction of some polyhedra associated with relation modules, which includes as a particular case, classical Gelfand–Tsetlin polytopes. As the main result we give a characterization of  $d$ -faces of the associated polyhedra in terms of the associated graph.