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On the circuit diameter of some polytopes in combinatorial optimization

The diameter of a polyhedron P is the maximum value of a shortest path between a pair of vertices of P , where one is allowed to walk on the edges (1-dimensional faces) of P . The circuit diameter of P is instead defined as the maximum value of a shortest circuit-path between a pair of vertices of P , where one is allowed to walk using the direction of potential edges of P , i.e. edges that can arise by translating the facets of P . In this talk, we will give new bounds on the diameter and on the circuit diameter of some polytopes that describe the set of feasible solutions of classical combinatorial optimization problems.