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Low Dimensional Neighbourly Polytopes

Among the d -polytopes with v vertices, the neighbourly polytopes have the greatest number of facets. This maximum property of neighbourly polytopes has prompted researchers to compile lists of them. In this talk, we will discuss the simplicial neighbourly 5-polytopes with nine vertices. We show that there are at least one hundred, twenty-six of them. We discuss the connection between the neighbourly 4-polytopes with eight vertices, the neighbourly 5-polytopes with nine vertices, and the neighbourly 6-polytopes with ten vertices.