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# Quadrangles of type $F_4$

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A generalized polygon is a rank two geometry whose incidence graph satisfies

$$\text{girth} = 2 \cdot \text{diameter} < \infty.$$

In fact, these polygons are the irreducible spherical buildings of rank two. The irreducible spherical buildings of rank at least three were classified by J. Tits, but a classification in the rank two case is not feasible, since there are free constructions. However, under the additional assumption that the polygons are ‘Moufang’, this task becomes possible. One unexpected class of Moufang quadrangles - initially missing in the classification - was discovered by R. Weiss, and they are nowadays called ‘quadrangles of type  $F_4$ ’. The goal of this talk is to give a general idea of what these quadrangles are and what makes them exceptional.