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Polyhedra inscribed in quadrics, anti-de Sitter and half-pipe geometry.

In this talk we will show that a planar graph is the 1–skeleton of a Euclidean polyhedron inscribed in a hyperboloid if and only if it is the 1–skeleton of a Euclidean polyhedron inscribed in a cylinder if and only if it is the 11–skeleton of a Euclidean polyhedron inscribed in a sphere and has a Hamiltonian cycle. This result follows from the characterisation of ideal polyhedra in anti-de Sitter and half-pipe space in terms of their dihedral angles. We also characterise those polyhedra in terms of the induced metric on their boundary.

(This is joint work with J Danciger and J-M Schlenker.)