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Title: Rigidity of Polyhedral surfaces.

Abstract: Classical differential geometry deals with smooth surfaces and Riemannian metrics. In contrast, a polyhedral surface, such as a tetrahedron, is a surface composed of Euclidean (or spherical, hyperbolic) triangles. This talk discusses the geometry of polyhedral surfaces. One of the main problems on surface geometry is to understand the relationship between curvature and metric. The metric-curvature relation for polyhedral surfaces is governed by the cosine law. We will show you how derivative of the cosine law implies many rigidity phenomena about the polyhedral surfaces. Applications to the Teichmuller space of surfaces with boundary will also be discussed.