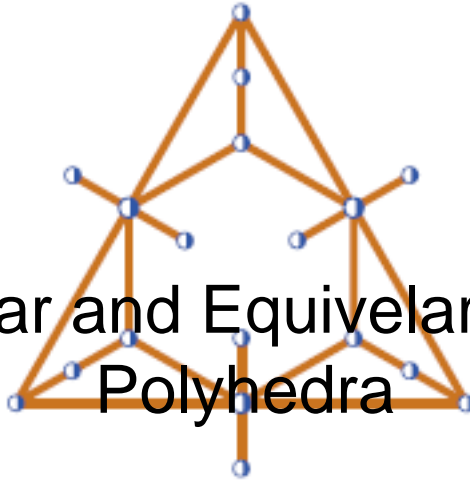


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On Regular and Equivelar Leonardo Polyhedra



Content :

A Leonardo polyhedron is a polyhedral 2-manifold without boundary, embedded in Euclidean 3-space with the geometric symmetry (or rotation) group of a Platonic solid and of genus $g > 1$. The polyhedra are called after Leonardo's famous illustrations. Only six regular Leonardo polyhedra are known: Coxeter's four regular skew polyhedra, and the polyhedral realizations of the regular maps by Klein of genus 3 and by Fricke and Klein of genus 5. In this talk we present infinite series of equivelar (i.e. locally regular) Leonardo polyhedra, which share some properties with the regular ones, namely same Schläfli symbols and related topological structure. So the weaker condition of local regularity allows a much greater variety of symmetric polyhedra. On the other hand, they represent a large class of equivelar maps.

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