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**Joseph Malkevitch\*** (joeyc@cunyvm.cuny.edu), Department of Mathematics, York College (CUNY), Jamaica, NY 11451. *Isosceles colorings of triangulations and their geometrical realizations.*

It is well known that there are eight convex 3-dimensional polyhedra with equilateral triangles as faces. What can be said about those 3-dimensional convex polyhedra which can be built with congruent isosceles triangles as faces or, more generally, isosceles triangles? One approach to this problem is to color the edges of a plane triangulation (with at least 4 vertices) so that each face has two edges with one of the colors and one edge with another color. This study investigates a variety of results and conjectures about such "isosceles colorings" of triangulations. In particular, it will be shown that if 4 divides the number of faces of the triangulation, it is possible to color its edges with two colors a and b so that the number of triangles with two a edges and one b edge is the same as the number of triangles with two b edges and one a edge. Little is known about realizing these triangulations metrically by convex polyhedra with isosceles triangle faces. (Received September 27, 2005)