1067-54-1349   **Aldo-Hilario Cruz-Cota*** (`cruzal@gvsu.edu`), 1 Campus Drive, A-2-178 MAK, Allendale, MI 49401. *Classifying Voronoi Graphs of Hex Spheres.*

A surface is called *singular Euclidean* if it can be obtained from a finite disjoint collection of Euclidean triangles by identifying pairs of edges by Euclidean isometries. The surface is locally isometric to the Euclidean plane except at finitely many points, at which it is locally modeled on Euclidean cones. These singular points are called the *cone points* and, in some sense, the curvature of the surface is concentrated at these points. For each cone point there is a *cone angle*, which is the sum of the angles of the triangles that are incident to the cone point.

A *hex sphere* is a singular Euclidean sphere with 4 cones whose cone angles are (integer) multiples of $\frac{2\pi}{3}$ but less than 2π. Given a hex sphere M, we consider its Voronoi decomposition centered at the two cone points with greatest cone angles. In this talk we use elementary Euclidean geometry to describe the Voronoi regions of hex spheres and classify the Voronoi graphs of hex spheres (up to graph isomorphism). (Received September 20, 2010)

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