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Aldo-Hilario Cruz-Cota* (cruza1@gvsu.edu), Department of Mathematics, Grand Valley State University, A-2-178 Mackinac Hall, 1 Campus Drive, Allendale, MI 49401-6495. *The Moduli space of singular Euclidean structures on a sphere with 4 cone points whose cone angles are integer multiples of $\frac{2\pi}{3}$ but less than 2π .* Preliminary report.

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*. 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.

In this paper I will describe a parameter space for the moduli space of singular Euclidean structures on a sphere with 4 cone points whose cone angles are integer multiples of $\frac{2\pi}{3}$ but less than 2π . This classification involves finding a canonical decomposition of a singular Euclidean surface into two subsets called *Voronoi cells*. (Received September 21, 2009)