

1067-Z1-1685 **J Mealy*** (jmealy@austincollege.edu), Austin College, Suite 61560, 900 North Grand Avenue, Sherman, TX 75090, and **Gregory Koch**. *Minimizing networks in Snell Geometry; the Snell-Steiner criterion.*

Further results in the category, Snell Geometry. (See various Snell Geometry abstracts from MathFests 2008–2010.) Recall that a Snell Geometry is a system consisting entirely of regions of locally constant curvature, wherein Snell’s Law (of optics) is in play across the boundaries between these regions of constant curvature (but which have different “indices of refraction”, n). After a few general remarks about this category, we report on recent work on minimizing networks in Snell systems (where all regions have zero curvature, but different values of n .) Here, both the Snell dynamic, as well as the Steiner minimizing tree configuration, are in play. Software modeling both of these phenomena has been developed and used to investigate these networks; this will be displayed. Of particular note, we are able to render a large set of non-classical Steiner point configurations. We discuss a criterion that was subsequently derived which characterizes these non-classical configurations, and further which subsumes both Snell’s Law and the classical Steiner configuration. Some discussion of this dynamic within yet more complex Snell systems will be included. (Received September 21, 2010)