Pure Mathematics Seminar

Generalizations of Steiner's porism and Soddy's hexlet

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Suppose we have a chain of k circles all of which are tangent to two given non-intersecting circles C, S, and each circle in the chain is tangent to the previous and next circles in the chain. Then, any other circle K that is tangent to C and S along the same bisector is also part of a similar chain of k circles. This fact is known as Steiner's porism. Soddy's hexlet is a chain of six spheres each of which is tangent to both of its neighbors and also to three mutually tangent given spheres. Frederick Soddy published the following theorem in 1937: It is always possible to find a hexlet for any choice of three mutually tangent spheres. In this talk we show that generalizations of Steiner's porism and Soddy's hexlet in higher dimensions can be found via packings by congruent spheres in spherical spaces. In particular, will be listed all analogs of Steiner's porism.

Date: **Friday, October 20, 2017**
Time: **10:00 am**
Place: **Edinburg:** EMAGC 1.324, **Brownsville:** BLIBR 2.206

The talk will delivered live at the *Brownsville* campus and will be streamed to the Edinburg campus

Coffee will be served.

For further information or for special accommodations, please contact Dr. Sergey Grigorian via email at [sergey.grigorian@utrgv.edu], or Dr. Alexey Garber at [alexey.garber@utrgv.edu], or visit the webpage http://www.utrgv.edu/math/news-events/seminars/puremath/index.htm