

# Topology, Arithmetic, & Dynamics Seminar

How to pinch a neck on a convex  $RP^2$  surface

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A convex  $RP^2$  surface is given as a quotient of a bounded convex domain in  $RP^2$  by a group of projective motions acting discretely and properly discontinuously. These surfaces generalize hyperbolic surfaces, which admit a convex  $RP^2$  structure via the Klein model of the hyperbolic plane. I will define regular convex  $RP^2$  structures as those in which one or more (non-intersecting, non-homotopic) necks are separated. I will classify the limits which can be constructed in this way, and put a topology on the moduli space  $R$  of regular convex  $RP^2$  structures which is similar to the topology on the Deligne-Mumford compactification  $\overline{\mathcal{M}}_g$  of the moduli space of hyperbolic surfaces. I will also state a theorem which shows that  $R$  has the structure of an orbifold vector bundle over  $\overline{\mathcal{M}}_g$ , and will give an indication of the proof, which involves cubic differentials and geometric analysis.

Date: **Friday, September 25, 2015**

Time: **2:30-3:30pm**

Place: **4106 Exploratory Hall**

For special accommodations, please contact Sean Lawton via email at [slawton3@gmu.edu](mailto:slawton3@gmu.edu).