13
The Saddle
(Hyperbolic Paraboloid)

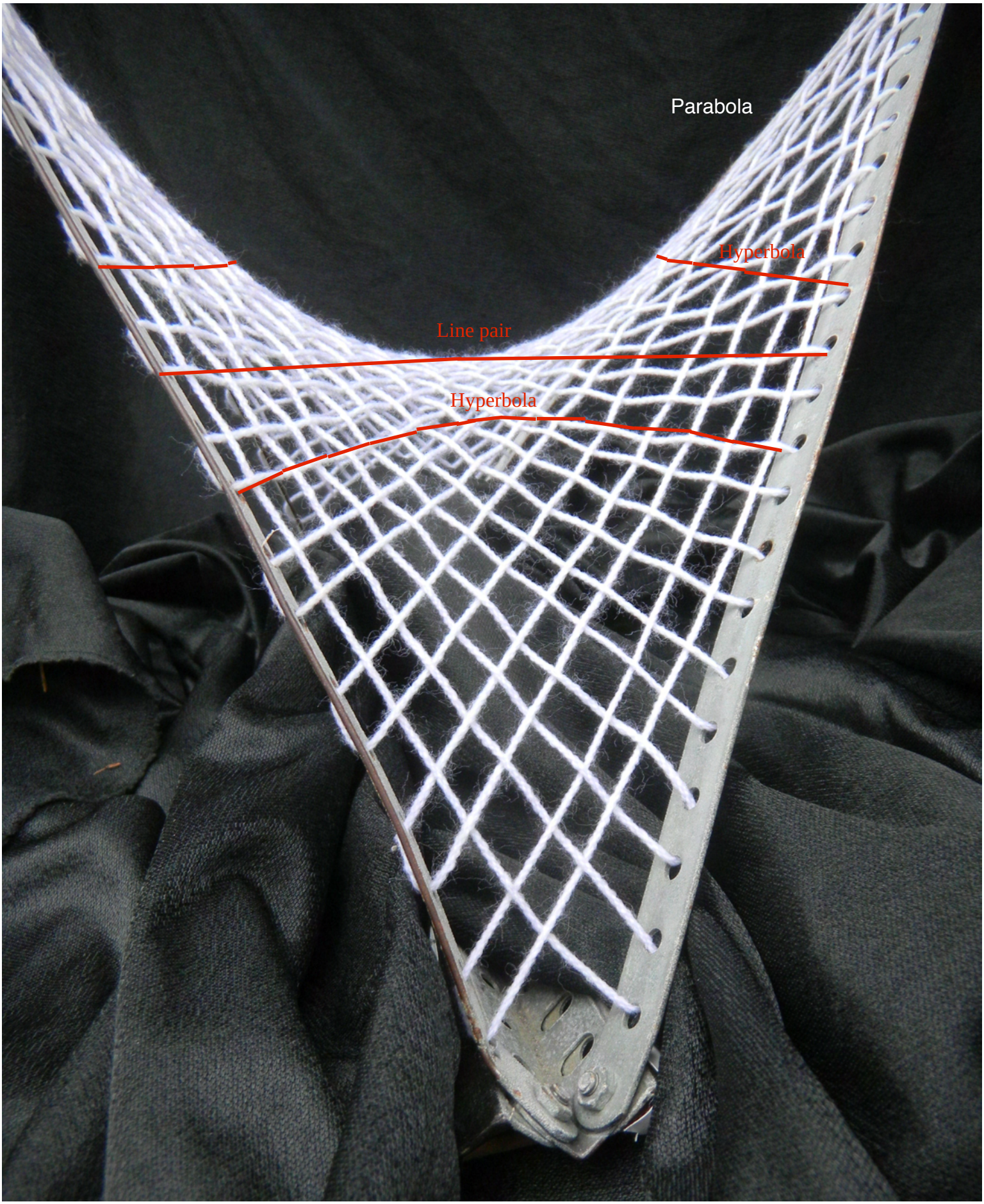
www.magicmathworks.org/geomlab13

Lay the slit on the projector and stand the saddle in its path. Set the slit vertically to produce parabolas and horizontally to produce hyperbolas.

In each case translate the slit to scan the whole model.

In the horizontal setting you will pass through the position where the plane of section is tangent to the saddle. At this point one hyperbola pair degenerates into a line pair before becoming the pair which goes the other way.

Paraboloid
Parabola
Hyperbola
Line
Hyperboloid
Ellipse
Hyperbolic paraboloid
Sphere
Line pair
Cone
Sine curve
Cylinder
Tractrix
Circle
Exponential curve
Line family
Catenary
Loxodrome
Catenoid
Helix
Equiangular spiral
Helicoid
Archimedean spiral
Plane
Tiling
Polygon
Polyhedron


Parabola
Hyperbola
Line pair
Hyperbola