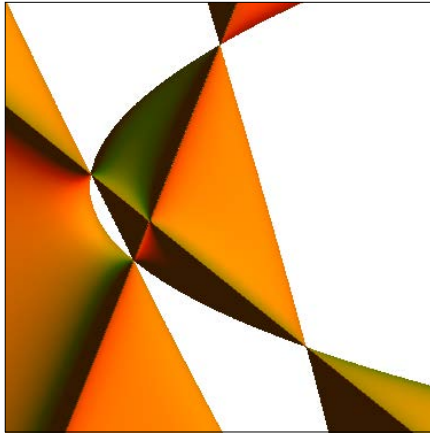


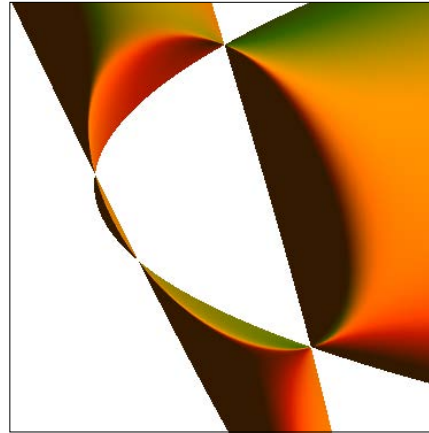
Discriminant of the conic through four given points and a fifth free point as a function of the location of the fifth point in the unit square. The boundaries between ellipse and hyperbola are formed by the two parabolas that can be drawn through the four given points (if they make a convex quadrilateral).

Negative D



The negative values of the discriminant get very large so we use log to compress them, which has the nice effect of making the very negative values, which correspond to hyperbolas very close to the axes, show up as ridges marking out the axes.

Positive D



The discriminant D is bounded on the positive side by $DS(\alpha) \approx 285.04$ so the positive side is well-behaved, and we see the ellipse territory in relief. The elliptical "ridge" is the ellipse that corresponds to the maximum discriminant.

Negative D green, positive D gray

