

R. Andrew Hicks

Sideview Mirrors and Panoramic Cameras

When viewing a curved mirror, it is apparent that some non-linear transformation is at work, which depends upon the mirror shape. In this talk I will address the problem of determining the mirror shape that will realize a prescribed transformation. The prescribed transformation determines a vector field which should be normal to the sought after mirror, but generally this vector field is not a gradient, or a multiple of a gradient. Appealing to the Hodge theorem allows one to find "best fit" surfaces normal to the vector field. I will describe several applications, including a sideview mirror for a car with no blindspot, and several ways in which mirrors can be used to create true panoramic photographs.

For more information, see [my home page](#).