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Diana Davis* (dianajdavis@gmail.com), 500 College Avenue, Swarthmore, PA 19081. *Tiling billiards and interval exchange transformations.*

Tiling billiards is a fascinating new dynamical system where beams of light refract through planar tilings. I'll explain how, with a group of undergraduates in the SMALL REU in 2016, we used a simple geometric observation to transform this two-dimensional problem into a one-dimensional problem, which reduces it to understanding interval exchange transformations. (Received September 13, 2017)