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Angle-tripling rotation sets and cubic polynomials.

Rotation sets under the angle-doubling map $t \mapsto 2t \pmod{\mathbb{Z}}$ of the circle play a key role in Douady-Hubbard's study of the quadratic family and the Mandelbrot set. This talk will consider a basic higher degree analog of this idea by investigating the link between rotation sets under the angle-tripling map $t \mapsto 3t \pmod{\mathbb{Z}}$ and one-dimensional families of cubic polynomials with a persistent indifferent fixed point. We discuss the structure of angle-tripling rotation sets and show how the parameter planes of cubic polynomials provide a concrete catalog of all these rotation sets. The emphasis will be on the less explored case of irrational rotation numbers. (Received January 31, 2016)