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**Arek Goetz\*** (goetz@sfsu.edu), 1600 Holloway Ave, Department of Mathematics, San Francisco, CA 94132. *Symmetries can be broken when taking the first return map of a symmetric piecewise rotation.*

In this preliminary report, we illustrate fascinating examples of piecewise rotations  $T$ . The maps  $T$  are reversely symmetric. However, their first returns on smaller domain no longer possess this property. Piecewise rotations are collections of rotations defined on polygons. The results are obtained using symbolic computations. (Received September 15, 2009)