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Jonathan Sullivan* (jonathan.k.sullivan@gmail.com), TX , and **Miguel Cuadros** (miguel_cuadros@att.net), 2715 S. Montreal Ave., Dallas, TX 75224. *Sliding Singularity's of Two-Dimensional Invertible Piecewise Isometries.*

We investigate the singularity of a class of two-dimensional invertible piecewise isometries proposed by A. Gotez, B. Kahng, J. Lowenstein, G. Poggiaspalla and F. Vivaldi. The purpose of this paper is to investigate the sliding singularity, which is known to generate all the complexities of the piecewise isometric systems in this class. We follow the method proposed by B. Kahng and expand the dynamics beyond the original phase space. Through this method, we calculate the sliding ratios of the dynamical systems for the rotation angles $\pi/5$ and $\pi/7$. Incidentally, the sliding ratio of each case turns out to be identical to the corresponding quantity of the symmetric uniform piecewise elliptic rotation map proposed and studied by R. Adler, P. Ashwin, L. Chua, X. Fu, B. Kahng, B. Kitchens, M. Orgorzalek and C. Tresser. (Received September 17, 2013)