

**WANDERING INTERVALS FOR AFFINE
PERTURBATIONS OF THE ARNOUX-YOCCOZ
FAMILY**

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ABSTRACT. Interval exchange maps (IEMs) appear in many different contexts in dynamical systems. In this work we consider the *Arnoux-Yoccoz family* of IEMs, a source of examples and counter-examples in the field. Let T be a member of this family. We consider very specific perturbations of T which yield *affine interval exchange maps* (AIEMs), this is, bijective maps of the interval whose derivative is piecewise constant (but not necessarily equal to one). We establish in which cases the affine perturbation f is conjugate with T and the class of differentiability of that conjugation. More interesting, some of these affine perturbations f are only semi-conjugate to T . They are obtained by inserting intervals along orbits of T à la Denjoy. However, in order to obtain semi-conjugacy with T , this surgery should be made along the orbits of very specific points (in fact finitely many points!). We will see that all of this is related to some fractal sets associated with a substitution, and which are "dual" to the famous Rauzy fractals.

This is a joint work with Rodolfo Gutierrez and Alejandro Maass.