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**Barak Weiss\*** (barakw@math.bgu.ac.il), Dept of mathematics, Ben Gurion University, Be'er Sheva, Israel. *Real REL is a flow.*

Let  $\mathcal{H}$  be a stratum of translation surfaces with  $k > 1$  singularities. It is locally modelled on  $H^1(S, \{x_1, \dots, x_k\}; \mathbb{R}^2)$ . The kernel foliation, or REL foliation, is a foliation on  $\mathcal{H}$ ; two translation surfaces are in the same plaque if their restriction to the absolute homology group is the same. A subfoliation called real REL is obtained by decreeing that two translation surfaces are in the same plaque if they are in the same rel leaf and relative periods differ only in their x coordinate. This foliation has also been called HORIZ, and has been studied by several authors; it is of interest in connection with the study of the horocycle flow.

In joint work with Yair Minsky, we show that leaves of real REL may be extended indefinitely, modulo the obvious obstruction of two singularities colliding. In the full measure subset of  $\mathcal{H}$  consisting of translation surfaces with no horizontal saddle connections joining distinct singularities, the leaves are orbits of an  $\mathbb{R}^{k-1}$ -action. Moreover the action may be extended to a measurable action of the semidirect product of  $B$  with  $\mathbb{R}^{k-1}$ , where  $B$  is the group of upper triangular matrices in  $SL(2, \mathbb{R})$ . (Received February 20, 2009)