

FLEXIBILITY OF REPRESENTATIONS OF $\pi_1(\Sigma)$ INTO THE SPACE OF ORIENTATION PRESERVING
HOMEOMORPHISMS OR THE LINE.

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This is a joint work with Juan Alonso and Cristobal Rivas. Let Σ be a closed hyperbolic surface and $Hom(\pi_1(\Sigma), Homeo_+(\mathbb{R}))$ the space of representations of its fundamental group into the group of orientation preserving homeomorphisms of the line. We showed that there are no locally rigid representations in this space. With this perturbation techniques we were also able to show

The space of representation without global fixed points is connected. ($x \in \mathbb{R}$ is a global fixed point for the action ρ if $\rho(g)(x) = x$ for every $g \in \pi_1(\Sigma)$) In fact there exists a representation without global fixed points whose conjugacy class is dense in $Hom(\pi_1(\Sigma), Homeo_+(\mathbb{R}))$.

Any representation can be approximated by another without global fixed points.

The space of left invariant orders in $\pi_1(\Sigma)$ is a Cantor set.

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