

# Kleinian Representations and $\mathbb{R}$ -trees

Marcel Vinhas Bertolini <sup>1</sup>

<sup>1</sup> Universidade Federal do Pará

Let  $\phi$  be a  $L$ -biLipschitz self-homeomorphism of a 3-manifold of the form  $\mathbb{H}^3/\Gamma$ , where  $\Gamma$  is a Kleinian group – possibly infinitely generated. Consider the space  $\mathcal{R}_\phi$  of Kleinian representations  $\rho$  of  $\Gamma$  such that  $\rho \circ \phi_* = f_* \circ \rho$  for a  $L$ -biLipschitz self-homeomorphism  $f$  of  $\mathbb{H}^3/\rho(\Gamma)$ , where  $\phi_*$  and  $f_*$  denote induced group-automorphisms. Call  $\phi$  “generating” if the HNN-extension of  $\Gamma$  associated to  $\phi_*$  is finitely generated. We extend results of Morgan-Shalen-Bestvina-Paulin and show that: for generating  $\phi$ , if a sequence  $\rho_n \in \mathcal{R}_\phi$  does not contain convergent subsequences, then it contains a subsequence that converges projectively to an isometric action of  $\Gamma$  on an  $\mathbb{R}$ -tree. Further properties and generalizations will be discussed. This is a joint work with André de Carvalho (IME-USP).