1176-20-98   **Jacob Russell*** (`jacob.russell@rice.edu`), **Davide Spriano** and **Hung Cong Tran**. *Regular languages and growth in Morse local-to-global groups.*

We construct regular languages for the Morse geodesics of the mapping class group, CAT(0) groups, 3-manifold groups, and any other group satisfying a local-to-global condition for their Morse geodesics. These regular languages allow us to study the growth of stable subgroups of these groups. We prove that these stable subgroups have rational growth and grow exponentially slower than the ambient group in all known examples. In the case of the mapping class group, this produces new results on the growth of the convex cocompact subgroups. (Received January 16, 2022)