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**Andrew Yarmola\*** (yarmola@math.princeton.edu). *Searching for marked Kleinian groups*. Preliminary report.

We will give an overview of rigorous computational techniques and applications of parameter space searches for marked Kleinian groups. These tools open the door to several difficult results in the study of hyperbolic 3-manifolds, including questions about volumes, tubes, Dehn surgery, and Margulis constants. An important aspect of this approach is that it can answer definitive questions about infinite families of Kleinian groups. The talk will focus on the necessary ideas and constructs for implementing such searches, as well as a review of applications and a discussion of future projects. (Received August 09, 2020)