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Alexander I. Suci* (a.suciu@neu.edu), Department of Mathematics, Northeastern University, Boston, MA 02115. *Fundamental groups of complex hyperplane arrangements*. Preliminary report.

Much of the fascination with arrangements of hyperplanes stems from the rich interplay between the combinatorics of their intersection lattice and the algebraic topology of their complement. Key to understanding the fundamental group is the stratification of the character variety by the jumping loci for cohomology with coefficients in rank one local systems. Counting torsion points on these loci yields information about the homology of finite covers of the complement (e.g., the Milnor fiber), and the number of homomorphisms to finite solvable groups. The closely related jumping loci for the cohomology of the Aomoto complex yield information about the lower central series quotients of the fundamental group.

This talk will be based on several joint projects with Daniel C. Cohen, Graham Denham, Daniel Matei, Stefan Papadima, and Henry K. Schenck. (Received February 18, 2003)