1046-57-1507 **Marc Culler*** (culler@math.uic.edu), Dept. of Mathematics (MC/ 249), University of Illinois at Chicago, 851 S. Morgan St., Chicago, IL 60607-7045, and **Steve Boyer**, **Peter B Shalen** and **Xingru Zhang**. *Characteristic subsurfaces, character varieties and Dehn fillings.*

We will describe joint work with Steve Boyer, Peter Shalen and Xingru Zhang that gives bounds on the distance (i.e. geometric intersection number) between exceptional Dehn filling slopes (i.e. slopes for which the Dehn filling produces a non-hyperbolic manifold). The proofs combine methods based on the characteristic submanifold theory with an analysis of character varieties. This talk will focus on the aspects that relate to character varieties. For the most part, the character varieties that arise are those of a free product of two cyclic groups; these appear when a Dehn filling produces a connected sum of lens spaces. (Received September 15, 2008)