

1118-20-132

Alexander I. Suci and **He Wang*** (wang.he1@husky.neu.edu), Department of Mathematics, Northeastern University, BOSTON, MA 02115. *Towards a new resonance-Chen ranks formula: the case of welded braids.*

The resonance varieties were introduced by Michael Falk in the context of hyperplane arrangements. Since then, this idea has been used to study any finitely generated group G . The Chen ranks of G are the LCS ranks of its maximal metabelian quotients. Cohen and Suci computed the Chen ranks of the pure braid groups. Recently, Cohen and Schenck completed the proof of the resonance-Chen ranks formula conjectured by Suci for arrangement groups. Closely related to the pure braid groups are the (upper) welded pure braid groups. We will present several results on the resonance varieties and the Chen ranks of the upper welded pure braid groups. These results provide a testbed for generalizing the resonance-Chen ranks formula. (Received January 28, 2016)