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**Chitrabhanu Chaudhuri\*** ([chitro@u.northwestern.edu](mailto:chitro@u.northwestern.edu)), 2033 Sheridan Road, Department of Mathematics, Northwestern University, Evanston, IL 60208. *Affine Stratification Number and Compactified Moduli Space of Curves.*

An affine stratification of a variety is like a cellular complex except built up by affine varieties which are locally closed. I shall explain the topological consequences of affine stratifications.

The affine stratification number of  $M_g$ , the moduli space of curves of genus  $g$  is  $g - 2$  for  $g \leq 5$ . Let  $\overline{M}_g$  be the Deligne-Mumford compactification. We explore a natural filtration on  $\overline{M}_g = \bigcup_k M_g^k$ , and the corresponding stratification on  $\overline{H}_g = \bigcup_k H_g^k$ , the hyper-elliptic locus. I shall talk about affine stratification of  $H_g^k$ .

To obtain a sharp result we shall have to do some cohomology computations and that is where colored operads, and McDonald's symmetric functions are used. (Received September 25, 2012)