

## A LINEARIZATION OF THE STABLE MODULI SPACE

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In this talk I will describe a program to address the Mumford Conjecture about the stable cohomology of the moduli space of curves. This program uses the homotopy theoretic approach due to Madsen and Tillmann. I will describe a functorial model for the classifying space of the stable mapping class group,

$$B\Gamma_\infty = \lim_{g \rightarrow \infty} B\Gamma_{g,1},$$

where  $\Gamma_{g,1}$  is the mapping class group of a genus  $g$  surface with one boundary component. I will then show how to “linearize” this model in the sense of Goodwillie and Weiss, and prove that the resulting space has cohomology as predicted by Mumford’s conjecture.