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GIT AND THE MODULI OF CURVES

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Abstract: I will discuss some recent progress made by Hassett and Hyeon on the moduli space of curves of genus g . Their work revolves around the study of the stability in the sense of Geometric Invariant Theory of n -canonical embeddings of smooth curves and the corresponding compactifications of the moduli space. For $n \geq 5$, it has been long known that this compactification is the Deligne-Mumford compactification. Schubert studied the cases when n is three or four. For $n = 2$, the Hilbert stability compactification is related to Schubert's compactification by a flip through the Chow stability compactification. These compactifications turn out to be log canonical models for $(\bar{M}_g, \alpha\delta)$ for α near $7/10$.