A moduli form of the Shafarevich conjecture

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Abstract. The proposed talk is a joint work with G. Derome. Our motivation lay in the Shafarevich conjecture: while Faltings proved that given an integer $g \geq 2$, a number field K and a finite set S of places of K, there are only finitely many K-curves of genus g with good reduction outside S, our goal was to show that a similar finiteness statement still holds if "K-curves of genus g" are replaced by "K-points on the moduli space $\mathcal{M}_g$". We achieved this goal by proving a uniform finiteness result for the obstruction to the field of moduli being a field of definition for $\overline{\mathbf{Q}}$-curves. We obtained other applications to arithmetic geometry, like a moduli generalization of the Mordell conjecture.