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Abstract: The moduli space $\mathcal{M}_g$ of smooth projective curves of genus g is a quasi-projective variety, singular on loci of dimension at most $2g-1$. Let $\mathcal{M}^0_g$ denote its smooth locus. Not much is known about the cohomology $H^i(\mathcal{M}^0_g, \mathbb{C})$ and even less about the spaces of holomorphic forms $H^i(\Omega^j_{\mathcal{M}^0_g})$. Notice that $\mathcal{M}_g$ is not compact, so in particular it doesn't carry a Hodge decomposition and thus $H^i(\Omega^j_{\mathcal{M}^0_g})$ can't be recovered from $H^i(\mathcal{M}^0_g, \mathbb{C})$ just using Hodge theory. In the talk I will present the result for $i=1,j=0$, namely that $\mathcal{M}_g$ do not admit holomorphic 1-forms, and I will briefly discuss its generalization to other moduli spaces realized as finite coverings of $\mathcal{M}_g$ (e.q. spin curves). The techniques comes from Hodge theory on the Deligne-Mumford compactification and intersection theory on the Satake compactification of $\mathcal{M}_g$. The work is joint with F.F. Favale and G.P.Pirola.) (15:15 - 15:35)