TERMINALITY OF MODULI SPACES OF CURVES ON HYPERSURFACES VIA THE CIRCLE METHOD

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I will report on recent joint work with Matthew Hase-Liu that shows that the moduli space of genus g curves of degree e on a smooth hypersurface of low degree only has terminal singularities, provided e is sufficiently large with respect to g. Using a spreading argument together with a result of Mustata, we reduce the problem to counting points over finite fields on the jet scheme of these moduli spaces. We solve this counting problem by developing a suitable version of the circle method.