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Periodic points of cubic polynomials with a specified multiplier

The multiplier of a periodic point for a holomorphic function on the Riemann sphere gives some information about the local dynamics: whether the periodic cycle attracts or repels nearby points, or acts unpredictably. I will discuss the moduli problem of parametrizing cubic polynomials with a marked point of period N and specified multiplier, a problem that turns out to have a lot more to do with algebraic geometry and number theory than it does with traditional complex dynamics.