Autonomous limit of the 4-dimensional Painleve-type equations and degeneration of curves of genus two

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The Painleve equations are second order nonlinear differential equations related to many branches of mathematics and physics such as isomonodromic deformations, the Riemann-Hilbert correspondences, moduli of connections, representations of affine Weyl groups, exactly solvable models and random matrix theory. The Painleve equations have been generalized from various aspects. Recently, the 4-dimensional Painleve-type equations were classified by corresponding linear equations. In this talk, I explain an attempt to characterize the 40 types of integrable systems obtained as the autonomous limit of the 4-dimensional Painleve-type equations, by inspecting the degenerations of their spectral curves, which are curves of genus two.