

Rational solutions of Painlevé IV

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I will report about a work in progress with Pieter Roffelsen (Sydney U.).

We show that the Stokes data of a rational solution of Painlevé IV characterizes a family of infinitely-sheeted coverings of the sphere with a finite number of elements. Any element of the given family characterizes a pole or a zero of the rational solution.

We compute, for certain range of the parameters, the asymptotic locations of the poles of rational solutions of Hermite type.