Eigen-solutions of Biconfluent Heun with respect to a complex weight

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Abstract:

The Heun equation belongs is a canonical second order linear differential equation with four regular singular points on the Riemann sphere. It has one more regular singualr point than the Gauss hypergeometric equation. We will look at one of its confluence cases and to show that there exists eigensolutions with respect to a complex weight. We shall make an effort to explain why these equations are important before going into the more technical issues.