

Yik-Man Chiang, HKUST, Hong Kong

Degenerated biconfluent Heun operator and Painlevé IV

It is classical that the Painlevé equations describe integral curves on moduli spaces of Fuchsian connections with four punctures on the Riemann Sphere as well as their confluent counterparts. These Painlevé equations also exhibits certain affine Weyl group symmetries with respect to their parameters in which its solutions degenerate. We exhibit that one can identify the parameter space for Painlevé IV directly from the biconfluent Heun connection with degenerate monodromy/Stokes data. Moreover, explicit horizontal sections of certain biconfluent Heun connections are derived. These are joint works with A. Ching, C. K. Law, C. Y. Tsang and G. F. Yu.