Contribution ID: **26**   Type: **not specified**

Isomonodromic deformations: Confluence, Reduction and Quantization

Friday, July 2, 2021 12:20 PM (40 minutes)

In this talk I will discuss the isomonodromic deformations of systems of differential equations with poles of any order on the Riemann sphere as Hamiltonian flows on the product of co-adjoint orbits of the Takiff algebra (i.e. truncated current algebra). This is based on work in collaboration with Ilia Gaiur and Volodya Rubtsov. Our motivation is to produce confluent versions of the celebrated Knizhnik–Zamolodchikov equations and explain how their quasiclassical solution can be expressed via the isomonodromic τ-function.

In order to achieve this, we study the confluence cascade of $r + 1$ simple poles to give rise to a singularity of arbitrary Poincar\'e rank r as a Poisson morphism and explicitly compute the isomonodromic Hamiltonians.

Primary author: Prof. MAZZOCCO, Marta (University of Birmingham)

Presenter: Prof. MAZZOCCO, Marta (University of Birmingham)