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Section:

5. Differential Geometry and Global Analysis

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Boalch, Philip Paul, University of Oxford, U. K.
Symplectic geometry and isomonodromic deformations.
Singular flat $Gl_n(\mathbb{C})$ connections over $\mathbb{C}P^1$ are viewed in three ways, giving different approaches to their moduli: 1) as spaces of coefficients of linear meromorphic differential systems on a trivial holomorphic vector bundle, 2) using an infinite dimensional C^∞ viewpoint, and 3) via Stokes matrices (which are the analogue of monodromy matrices for such connections). Intrinsic symplectic structures are exhibited on the spaces in 1) and 2) and the natural map between them is formally shown to be symplectic. These results yield a symplectic description of the equations for isomonodromic deformations (in the sense of Jimbo-Miwa-Ueno) which will also be presented.