

Galoisian Approach to Monodromy Evolving Deformations with Regular Singularities

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The parametrized Picard-Vessiot theory recently developed by Cassidy and Singer, building on previous work by Kolchin and Landesman, provides appropriate tools to study algebraic and topological properties of parameterized linear differential systems. We will in particular define parameterized regular singularities of such systems. Isomonodromic deformations with only regular singularities are characterized by their parameterized Galois group being conjugate, as a linear differential algebraic group, to a constant linear algebraic group. We similarly characterize a special type of “projective” monodromy evolving deformations by algebraic properties of their parameterized Galois group. This is joint work with Michael F. Singer.