

1023-30-583

David J. Pinchbeck* (dpinchbe@sjcme.edu), Department of Mathematics, St. Joseph's College, Standish, ME 04062. *Fuchsian Differential Equations with Regular Singularities.*

Given a Fuchsian connection Ω on a Riemann surface with a simple pole at p , consider the local matrix differential equation $F^{-1}\partial_z F = \Omega$ near p . If any two of the eigenvalues of the residue of Ω at p differ by a nonzero integer, the general solution has logarithmic terms. We present an approach to the solution in this exceptional case, and consider conditions under which the logarithmic terms disappear. (Received September 18, 2006)