

MA T H E M A T I C A L PH Y S I C S SE M I N A R

Rutgers University
Hill Center - Room 705

Constructive global analysis of differential systems

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Abstract

I will present a new method for proving global existence and uniqueness of solutions of differential systems and for studying their properties throughout their domain of existence. The method relies on recent results on the behavior of functions at essential singularities, and it appears to be quite general. I will illustrate the method on the stability question of solitons in focusing NLS and on the recent proof of the Dubrovin conjecture in integrable systems.

Work in collaboration with M. Huang and W. Schlag (U Chicago) and S. Tanveer (OSU).