

On discretizations of second order 2D linear differential equations and nonlinear integrable systems associated with them

Maciej Nieszporski^{1,2}, Adam Doliwa³, Decio Levi⁴, Paolo Maria Santini⁵

May 18, 2007

1. Department of Applied Mathematics. University of Leeds. Leeds (UK)
2. Katedra Metod Matematycznych Fizyki. Uniwersytet Warszawski. Warszawa (Poland)
3. Wydział Matematyki i Informatyki. Uniwersytet Warmińsko-Mazurski w Olsztynie. Olsztyn (Poland)
4. Dipartimento di Ingegneria Elettronica, Università degli Studi Roma Tre. Roma (Italy)
5. Dipartimento di Fisica, Università di Roma “La Sapienza” and Istituto Nazionale di Fisica Nucleare, Sezione di Roma. Roma (Italy)

We will show how to compensate the apparent lack of possibility of changing the independent variables in case of some difference integrable equations.