

A new real form of the spin Ruijsenaars-Schneider system

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The Ruijsenaars-Schneider (RS) system is a celebrated integrable system that describes the motion of interacting particles which are invariant under Poincaré transformations. In 1995, it was realised by Krichever and Zabrodin that the system admits a spin generalisation, where the particles are endowed with internal ‘spin’ degrees of freedom.

My goal is to review the story of the quasi-Hamiltonian reduction of such systems in the presence of a trigonometric potential. This will be based on a joint work with Chalykh (in the complex case) and a current investigation with Fehér (in the real case). As a motivation, I will start by recalling the geometric picture behind the simpler rational Calogero-Moser system with and without spin variables.