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A spectral description of the spin Ruijsenaars-Schneider system.

The Ruijsenaars-Schneider system is a many-particle integrable system which can be viewed as a relativistic analogue of the better known Calogero-Moser system. In this talk I will provide a moduli-theoretic description of the phase space for the RS system in terms of spectral sheaves living in particular $\mathbb{P}^1$ bundles over elliptic curves. In this description the flows are the naturally associated Hitchin flows. This yields an interpretation of the Lax matrix for the RS system as a Higgs field for the associated Hitchin system.