A (2+1)-DIMENSIONAL INTEGRABLE SPIN EQUATION AND ITS SOME PROPERTIES

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In this report, we consider the (2+1)-dimensional integrable spin equation

$$\mathbf{S}_t = \mathbf{S} \times (\alpha \mathbf{S}_{xx} + \beta \mathbf{S}_{xy}) + u\mathbf{S}_x, \tag{1a}$$

$$u_x = -\mathbf{S} \cdot (\mathbf{S}_x \times \mathbf{S}_y), \tag{1b}$$

where $\times$ denotes the vector-product, $\mathbf{S} = (S_1, S_2, S_3)$ is the spin vector, $\mathbf{S}^2 = 1$ and u is the scalar potential. The gauge-geometrically equivalent counterpart model of the Eq.(1) was obtained in [1], and its integrable reduction with $\alpha = 0$, $\beta = 1$ was studied in [2]. In this paper we will talk about the dispersion-less limit of the Eq.(1) and about the manifold corresponding to this model.

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