Models of cosmic strings: topological defects vs solitons

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Stable string-like two-dimensional excitations can exist both as topological defects and topological solitons. We shall briefly discuss difference between these 2 types of extended field structures. Comparison will be made of Abrikosov-Nielsen-Olesen topological defects and topological solitons in $U(1)$ gauged Heisenberg antiferromagnet nonlinear sigma model with easy-axis anisotropy. The latter model ("the A3M model") can be viewed as two-step generalization of the sine-Gordon equation; global $Z(2)$ and local $U(1)$ symmetry of the A3M model lead to exclusive surprising properties of its 2D solitons.