

Families of kinks in non-linear Sigma models on the torus

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In this talk the construction of a family of Hamilton-Jacobi separable non-linear $S^1 \times S^1$ –Sigma models is presented, ensuring the analytical identification of the kink variety and the stability of the emerging kinks. Furthermore, a model with only one vacuum point is found on the torus, forcing the orbits of all kinks to be closed. The non-simply connectedness of the torus guarantees the global stability of all the kinks in these models.