

## Jendrej Jacek

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Title: Dynamics of kink clusters for scalar fields in dimension 1+1

Abstract: We consider classical scalar fields in dimension 1+1 with a self-interaction potential being a symmetric double-well. Such a model admits non-trivial static solutions called kinks and antikinks. A kink cluster is a solution approaching, for large positive times, a superposition of alternating kinks and antikinks whose velocities converge to 0 and mutual distances grow to infinity.

Our main result is a determination of the asymptotic behaviour of any kink cluster at the leading order. Our results are partially inspired by the notion of “parabolic motions” in the Newtonian n-body problem. I will present this analogy and mention its limitations. I will also explain the role of kink clusters as universal profiles for formation of multi-kink configurations. This is a joint work with Andrew Lawrie.

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