

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Topological solitons in scalar field theory** ALIAKSEI HALAVANAU,  
Northern Illinois Univ — Over last 40 years the topological solitons, the localized, lump-like, finite-energy field configuration which appear in non-linear theories in various space-time dimensions have been intensively studied in various frameworks. We present a numerical study of the process of the kink-antikink collisions in three one-dimensional potential models, such as  $\phi^4$  (double well), coupled  $\phi^4$  and  $\phi^6$  (triple well). We also take into consideration the case of real scalar field in 3 spacial dimensions, where there are simple theories from the Skyrme family with soliton solutions. Different types of field configurations are discussed. Our results reveal new types of soliton solutions in coupled  $\phi^4$  model along with new high charge and massive configurations in Faddeev-Skyrme model. Extensive study of  $\phi^4$  potential is presented.

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Date submitted: 14 Nov 2013

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