

Lumpy Cosmic Strings

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We outline a model of abelian-Higgs strings with variable scalar and vector core radii. In general, the functions determining the time and position-dependent core widths may be expressed as arbitrary left or right movers, of which the usual constant values are a particular solution. In this case the string may carry momentum, even if the embedding of its central axis remains fixed, and the resulting objects resemble “necklaces”. Some possible astrophysical applications, such as lumpy strings as engines for anomalous gamma ray bursts, are also discussed.

Primary author: Dr LAKE, Matthew (The Institute for Fundamental Study, Naresuan University, Phitsanulok 65000, Thailand)

Presenter: Dr LAKE, Matthew (The Institute for Fundamental Study, Naresuan University, Phitsanulok 65000, Thailand)

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