

Abstract Submitted
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**A New Line Representing Meson Masses and Angular Momenta:
An Alternate Approach to Regge Lines** NORMAN REDINGTON, M.A.K.
LODHI, Texas Tech University — Mesons within a given family are expected to lie on the so-called Regge lines with slope approximately 1.1 in the mass squared angular momentum plane. This, in practice, is one of the tests of a successful meson model. In this work we show that instead of a set of Regge lines, only one line (with half the slope of Regge lines) is needed, representing the mass squared in increasing order. The uncertainty in this relation is statistically less than for conventional Regge lines. The slopes and intercepts of conventional Regge lines can be obtained from this new line in terms of a “new number,” which is related to masses of mesons. This new line is used to test the results for meson masses within various families as obtained from a five-dimensional wave equation, the Bethe-Salpeter equation, and the one-body Dirac equation.

M.A.K. Lodhi
Texas Tech University

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