

1056-35-1300

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The scattering of waves in strings with a single change in their constant density is well known. One can also write the solution of the wave equation when there are two changes in the density. We are interested in knowing the analog of these phenomena in solitary waves of kdv type, or in the extensional vibrations of a circular ring or the scattering of waves in a wave guide. (Received September 21, 2009)