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**Kiril Datchev\*** (datchev@math.berkeley.edu) and **Justin Holmer**. *Fast soliton splitting by an attractive delta potential.*

We study the Gross-Pitaevskii equation with an attractive delta function potential. We show that in the high velocity limit an incident soliton is split into a reflected and a transmitted soliton component, plus a small amount of dispersion. We give explicit analytic formulas for the reflected and transmitted portions, while the remainder takes the form of an error. Although the existence of a bound state for this potential introduces technical difficulties not present in the case of a repulsive potential, we show that the proportion of the soliton which is trapped vanishes in the limit. (Received August 20, 2007)