1016-35-159 **Justin Holmer*** (holmer@math.berkeley.edu), University of California, Berkeley, Department of Mathematics #3840, Berkeley, CA 94720, and **Jeremy Marzuola** and **Maciej Zworski**. *Fast soliton scattering by delta impurities.*

We study the Gross-Pitaevskii equation with a repulsive delta function potential. We show that a high velocity incoming soliton is split into a transmitted component and a reflected component. The transmitted mass (L^2 norm squared) is shown to be in good agreement with the quantum transmission rate of the delta function potential. We further show that the transmitted and reflected components resolve into solitons plus dispersive radiation, and quantify the mass and phase of these solitons. (Received February 10, 2006)