

Abstract Submitted
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Initial Measurements of the Total Cross-Sections of the Reactions
 $K^- + p \rightarrow \Sigma(1385) + \gamma$ and $K^- + p \rightarrow \Sigma(1385) + \pi^0$ in the Crystal Ball JASON
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The first ever measurements of the total cross-sections for the reactions, $K^- + p \rightarrow \Sigma(1385) + \gamma$ and $K^- + p \rightarrow \Sigma(1385) + \pi^0$, are being determined for kaon momenta ranging from 514-750 MeV/c. These studies provide new insight into the states of excited Sigma and Lambda particles. Analysis is being done using data collected by the Crystal Ball Spectrometer in the AGS at Brookhaven National Laboratory. The Crystal Ball is primarily a photon detector, consisting of 672 NaI crystals. Kaons were incident on a liquid hydrogen target with the reaction final-state particles registering in the detector crystals. Charged particles were vetoed using plastic scintillators, thus restricting analysis to neutral particles. The primary background reactions for $K^- + p \rightarrow \Sigma(1385) + \gamma$ include $K^- + p \rightarrow \Sigma(1385) + \pi^0$ and $K^- + p \rightarrow \Lambda + 2\pi^0$; these backgrounds, along with several others, were studied using GEANT Monte Carlo simulations. Measurements of the total cross sections for both reactions will be presented.

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