

Abstract Submitted  
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**Monte Carlo Simulation of Homestake Background**<sup>1</sup> CHAO ZHANG, DONGMING MEI, University of South Dakota — Background characterization is critical to the shielding design for the incoming DUSEL experiments. A simulation is performed by applying the composition of Homestake rock samples. Then the neutron and gamma ray fluxes as a function of energy induced by natural radioactivity at Homestake mine are calculated. In particular, utilizing the rock radioactivity counted by Al Smith at LBL, the neutron flux and gamma-ray flux at the 4850-level and 7400-level are predicted. The results can be used as a reference for the shielding design for low background experiments planned at DUSEL.

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