

Abstract Submitted
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A Compton Suppressed Gamma Ray Counter For Radio Assay of Materials BENJAMIN GODFREY, UC Davis — Rare event searches, such as direct dark matter experiments, require materials with ultra-low levels of natural radioactivity. We present a neutron activation analysis (NAA) technique for assaying metals, specifically titanium used for cryostat construction. Earlier attempts at NAA encountered limitations due to bulk activation via (n, p) reactions, which contributed to large continuum backgrounds due to Compton tails. Our method involves a heavy water shielded exposure to minimize (n,p) reactions and a sodium iodide shielded high purity germanium counter for the gamma ray assay. Preliminary results on assays for U/Th/K contamination in titanium will be presented.

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