

Abstract Submitted
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Investigation of Annual Modulation Signal from Radon Induced Gamma Rays¹ CHAO ZHANG, DONGMING MEI, University of South Dakota
— The phenomenon of annual modulation is believed to be one of the signatures induced by Weakly Interacting Massive Particles(WIMPs) through elastic scattering off nucleus in the target for direct dark matter searches. Both DAMA and CoGeNT experiments have claimed the discovery of dark matter in terms of annual modulation while many other experiments have ruled out the entire claimed region. However, the sources that caused the annual modulation in DAMA and CoGeNT are still unknown which need to be investigated. Annual modulations of Radon at underground sites are reported by many experiments. As a potential source, we investigate (alpha, gamma) reactions, induced by radon decay chain, occurring on the surface of those common shielding materials and explain how this background annual modulation may mimic dark matter signature.

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