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Search for New Physics in Beryllium

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Nuclear transitions provide a means to probe light, weakly-coupled new physics and portals into the dark sector. Particularly promising are those transitions that can be accessed through excited nuclear states that are resonantly produced, providing a high-statistics laboratory to search for MeV-scale new physics. In this talk we will review the so-called 8Be - anomaly, which is a 6.8σ discrepancy reported by the ATOMKI group in the observation of the decays of excited 8Be -nuclei to their ground state via internal e^+e^- pair creation. The anomaly can be explained by the emission of a neutral boson with a mass of 17 MeV. We discuss the ATOMKI experiment and present ideas about a possible follow-up experiment to confirm these results.

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