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A Mundane Explanation for the "ATOMKI Anomaly"[1] BENJAMIN SHEFF, Univ of Michigan - Ann Arbor, ALEKSANDRS ALEKSEJEVS, SVETLANA BARKANOVA, Memorial University of Newfoundland, PETER CONNICK, YURY KOLOMENSKY, University of California, Berkeley — Using the electron-positron pair spectrometer at the 5 MV Van de Graaff-accelerator at the Institute for Nuclear Research, Hungarian Academy of Sciences (ATOMKI), Krasznahorkay *et al.* announced data deviating from the Standard Model of particle physics. The authors claim a 6.8 σ excess in internal pair creation at high relative angles for the particle pair released in the isoscalar transition $^{8}\mathrm{Be}^{*} \rightarrow ^{8}\mathrm{Bee}^{+}\mathrm{e}^{-}$, indicative of a particle of mass circa 16.7 MeV. A similar excess has now been seen in the ^{4}He system. A hypothetical gauge boson, a carrier of a fifth force, has been proposed as an explanation for the excesses. We show that a more mundane explanation may lie in the presence of additional nonresonant decay amplitudes, such as a second-order electromagnetic transition.

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