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Tracing Remnants of the Baryon Vector Current Anomaly in Neutron Radiative β -Decay

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We show that a triple-product correlation in the neutron radiative β -decay rate, characterized by the kinematical variable $\mathbf{l}_p \cdot (\mathbf{l}_e \times \mathbf{k})$, isolates the pseudo-Chern-Simons term found by Harvey, Hill, and Hill as a consequence of the baryon vector current anomaly and $SU(2) \times U(1)$ gauge invariance at low energies. We consider the bound which emerges on the strength of its neutral current analogue from MiniBooNE data and compute the size of the expected asymmetry in $n \rightarrow pe^- \bar{\nu}_e \gamma$.

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