

# Parity violation is evidence that our universe is inside an extremal Kerr black hole

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If our universe is inside an extremal Kerr black hole, then the angular momentum vector of the black hole can be identified with the axial vector responsible for the handedness of the weak interaction. One condition for our universe to be inside such a black hole is that general covariance in general relativity must be abandoned. General covariance (the principle that physical laws should look the same in all coordinate systems) may simplify the math in general relativity, but at the cost of excluding other possible physics. Instead of general relativity this paper uses absolute gravity. A result is that the handedness of the weak interaction is essentially a quantum gravitational effect. Weak interactions in the top and bottom halves of a rotating black hole have opposite handedness, resulting in an overall conservation of parity. The predicted association of the weak interaction with angular momentum is experimentally testable here on Earth. For example, one might measure variations in parity violation with respect to varying angular momentum. Several experiments along these lines have already been performed, with results consistent with our universe being inside a rotating black hole, and consistent with a breakdown of general covariance.

To be presented as a poster at the APS 2024 conference, on April 3-6 in Sacramento. The paper will be posted as a preprint at [pgu.org](http://pgu.org) before the conference.

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