

Abstract Submitted
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Vector Theories with Spontaneous Lorentz Violation. ROBERT BLUHM, Colby College, ALAN KOSTELECKY, Indiana University — Gravitational theories in which a vector field acquires a nonzero vacuum expectation value exhibit spontaneous breaking of Lorentz and diffeomorphism symmetry. The effects of this symmetry breaking include the generation of massless Nambu-Goldstone modes and additional couplings leading to modifications in the static limits of the gravitational and vector-field interactions. Under suitable circumstances, the class of such theories includes solutions equivalent to Einstein-Maxwell theory as well as a range of alternative solutions with modified gravitational interactions.

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