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Spontaneous Lorentz symmetry breaking and topological defects
MICHAEL SEIFERT, Indiana University — "Lorentz-violating" theories, in which Lorentz symmetry is spontaneously broken via a vacuum expectation value of a vector or tensor field, have been the subject of much interest in recent years. It is well-known (from other contexts) that spontaneously broken symmetries can give rise to topological defects. I will discuss the possible topological defects that can arise in Lorentz-violating theories. The types of topological defects occurring in a given theory depends critically on the rank and symmetry structure of the Lorentz-violating tensor field involved; for appropriate choices of tensor field, domain wall solutions and monopole solutions can be found. The stability and the cosmological implications of these field configurations will also be discussed.

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