

# ZEROS OF CONFORMAL VECTOR FIELDS IN ANY METRIC SIGNATURE

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The connected components of the zero set of any conformal vector field, in a pseudo-Riemannian manifold of arbitrary signature, are shown to be totally umbilical conifold varieties, that is, smooth submanifolds except possibly for some quadric singularities. The singularities occur only when the metric is indefinite, including the Lorentzian case. This generalizes an analogous result for Riemannian manifolds, due to Belgun, Moroianu and Ornea (2010).