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Dirac equation in curved spacetime and hidden symmetries

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I will discuss the importance of hidden symmetries in the study of the Dirac equation curved spacetime. Conformal Killing-Yano special tensors are associated to symmetries of the Dirac equation, and in some notable cases like the higher dimensional Kerr-NUT-(A)dS black holes lead to full separation of variables. I will discuss in this case how the symmetries operators can be simultaneously diagonalised. Conformal Killing-Yano tensors and their related symmetry operators admit a generalisation in the case of metrics with fluxes that are of relevance for supergravity theories. Finally, if time permits I will mention the Eisenhart lift of a spacetime and its relation to the Dirac equation.