Higher-dimensional NUT-like and near-horizon geometries from the Kerr–NUT–(A)dS metrics

Ivan Kolář

Institute of Theoretical Physics, Faculty of Mathematics and Physics, Charles University, V Holešovičkách 2, 180 00 Prague, Czech Republic
Ivan.Kolar@utf.mff.cuni.cz

April 12, 2017

ABSTRACT

The Kerr–NUT–(A)dS metrics describe the gravitational fields of higher-dimensional black holes rotating in several independent planes of rotation in the presence of a cosmological constant and NUT parameters. In this talk, I would like to present several limits of these metrics which we have studied recently [1]. In particular, I will focus on a class of geometries, where some roots of the metric functions degenerate. I will describe our limiting procedure that leads, for example, to the Taub–NUT–(A)dS spacetime and extreme near-horizon geometries. Also, I will discuss the enhanced symmetries of the resulting spacetimes which are manifested by the presence of supplementary Killing vectors and the decomposition of Killing tensors into Killing vectors.

References

[1] I. Kolář and P. Krtouš, *NUT-like and near-horizon limits of Kerr–NUT–(A)dS*, 2017, arXiv:1701.03950 [gr-qc]