

# Type D conformal initial data

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February 20, 2019

## Abstract

For a vacuum initial data set of the Einstein field equations it is possible to carry out a conformal rescaling or conformal compactification of the data giving rise to an initial data set for the Friedrich vacuum conformal equations. When will the data development with respect to the conformal equations of this set be a conformal extension of a type D solution? In this work we provide an answer to this question. The answer is a set of necessary and sufficient conditions on a set of initial data for the conformal equations that guarantees that the data development of the conformal equations is conformal to a vacuum type D solution of the Einstein's equations. We particularize our construction to the case of the Kerr solution, thus finding a set of necessary and sufficient conditions for the data for the conformal equations such that its development is conformal to the Kerr solution.