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The Einstein equations at space-like infinity

The Bondi-Sachs coordinates are extremely useful in a description of asymptotically flat metrics in the null infinity. They allow to reduce the number of the Einstein equations. The remaining equations can be solved recursively if metric can be expanded into a power series in the inverse of the radial distance r. In the case of the spatial infinity the commonly used coordinates are the Gauss coordinates related to a space-like hypersurface. They allow to write the constraint equations in a convenient way but their solving remains a nontrivial task. In this work we propose another system of coordinates which are more similar to the Bondi-Sachs coordinates concerning reduction of the Einstein equations and expansions in 1/r.

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