

Initial data of slow fall off

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The usual definition of asymptotic flatness at spatial infinity requires that the flat metric be approached at a particular rate. However, slower rates of fall off are compatible with well-defined evolution under the Einstein vacuum equations. Since initial data must satisfy the constraint equations, we want to know if we can specify the fall off rate that we want and still have compatibility with the constraint equations. I will show that we can, first in the context of Brill waves, and then more generally.

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