Asymptotic structure of gravity

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Outline:

The lectures will develop a pedagogical introduction to the asymptotic structure of gravity. A systematic derivation of the asymptotic symmetries will be given, in the context of the asymptotically flat case. Hamiltonian methods at spatial infinity will be followed throughout. Matching with null infinity will also be discussed.

Topics to be covered:

Hamiltonian vector fields and Hamiltonian functions - Proper and improper gauge transformations - General theorems - Connection between spatial infinity and null infinity: the example of the scalar field - Gravity in the asymptotically flat case and BMS group -Supertranslation ambiguity in the angular momentum – Supertranslation invariant angular momentum