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Numerical Relativity Simulations of Gravitational Wave Sources

Monday, 20 May 2024 15:05 (25 minutes)

I will discuss numerical simulations performed on HPC clusters of gravitational wave sources, with a particular focus on neutron star mergers. I will also describe the main numerical methods and tools that are used in this field and possible future directions. Neutron stars are very interesting laboratories for studying nuclear matter because of the extremely high densities that are reached in their core. Their simulations require the solution of the equations of hydrodynamics and magnetohydrodynamics in general relativity, making the use of HPC resources necessary.

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