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Coulomb Scalars, Tendicities, and Vorticities of Black Hole Spacetimes in Numerical Relativity TEHANI FINCH, ORAU / NASA GSFC, BERNARD KELLY, CRESST/UMBC/NASA GSFC, JOHN BAKER, NASA GSFC — A choice of time slicing specifies a split of the Weyl tensor into gravitoelectric and gravitomagnetic components. These components can be combined into a single complex quantity, one of whose eigenvalues gives an invariant called the Coulomb scalar; or they can be treated as separate real quantities, whose respective eigenvalues have been termed the tendicity and vorticity. This latter pair has recently gained attention as a vehicle for visualization and analysis of strongly curved spacetimes, and here we compare Coulomb-scalar and tendicity-vorticity calculations for black holes in binary systems.

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