

Abstract Submitted
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A high order accurate finite difference scheme with boundary closures for astrophysical simulations WYATT BREGE, Washington State University — In black hole simulations it is difficult to maintain high order accuracy for fluid evolutions in regions near excision inner-boundaries of the horizon, where many methods do not capture accurate information from the matter inflow of black hole-neutron star binary evolutions and other accretion type problems. With a multipatch Energy Stable Weighted Essentially non-Oscillatory (ESWENO) scheme, high order accuracy between patch interfaces and on domain data boundaries can be ensured for the hydrodynamic variables. We present preliminary results of a working multipatch ESWENO, focusing on multidimensional shock capture and applications for black hole accretion disk simulations.

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