Contribution ID: **10**   Type: **Talk**

Progress on cuHARM, a code for GR-R-MHD equations on graphics processing units

Thursday 27 February 2025 17:10 (18 minutes)

I will present progress on the development of the radiation module of cuHARM, a finite volume code which solves the general relativistic radiation magnetohydrodynamic equations in curved space-time. The specific intensity is resolved in frequency and in direction on a geodesic grid. I will describe the challenges linked to this discretization, which does not rely on the widely used M1 or M2 closure relations or on the assumption of grey transport. I will further discuss the implementation on graphics processing units (GPUs) to accelerate the computation, with an emphasis on performance, bottlenecks and scalability. I will conclude the talk by discussing future developments.

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