## **Athena++ Hydrodynamics**

2nd-Order van Leer Tasks 2nd-Order Runge-Kutta 1. StartAllReceive 2. CalculateFluxes 1st-order reconstruction: VL2-1 2nd-order reconstruction: VL2-2, RK2 3. HydroIntegrate 4. HydroSourceTerms 5/6 5/6 5. HydroSend 8b 8b 6. HydroReceive 7. Primitives  $F_{n+1/2}$ 8. PhysicalBoundary 9. UserWork only called in last substep 8b8b 10. NewBlockTimeStep only called in last substep

11. ClearAllReceive

P: primitive variables

F: fluxes

C: conserved variables

dependency only in GR

A must complete before B completes