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# Multi-scale and multi-physics modeling in Astrophyiscs

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Astrophysical research often relies on sophisticated software tools to model, simulate, and analyze complex astronomical phenomena. The dynamic range in astrophysics simulations often covers more than 20 orders of magnitude in temporal and spatial scales. Further complications are introduced by the interaction among various physicals process, such as gravity, hydrodynamics, nuclear fusion processes and radiative transfer. The Astrophysical Multipurpose Software Environment (AMUSE) stands as a pivotal platform in this domain, offering a versatile and comprehensive suite of tools tailored to address the multifaceted challenges of modern astrophysics.

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