Numerical Methods Analysis Using Smoothed Particle Hydrodynamics Simulations

Abstract

This paper presents a set of numerical experiments investigating how key parameters affect various simulations using Smoothed Particle Hydrodynamics (SPH) in Trixi-iParticles.jl. We vary relevant parameters in order to demonstrates how numerical concepts such as discretization error, stability, artificial compressibility, and transient decay manifest in particle-based fluid and solid simulations.

1   Introduction

2   Methods

3   Results

4   Conclusion

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