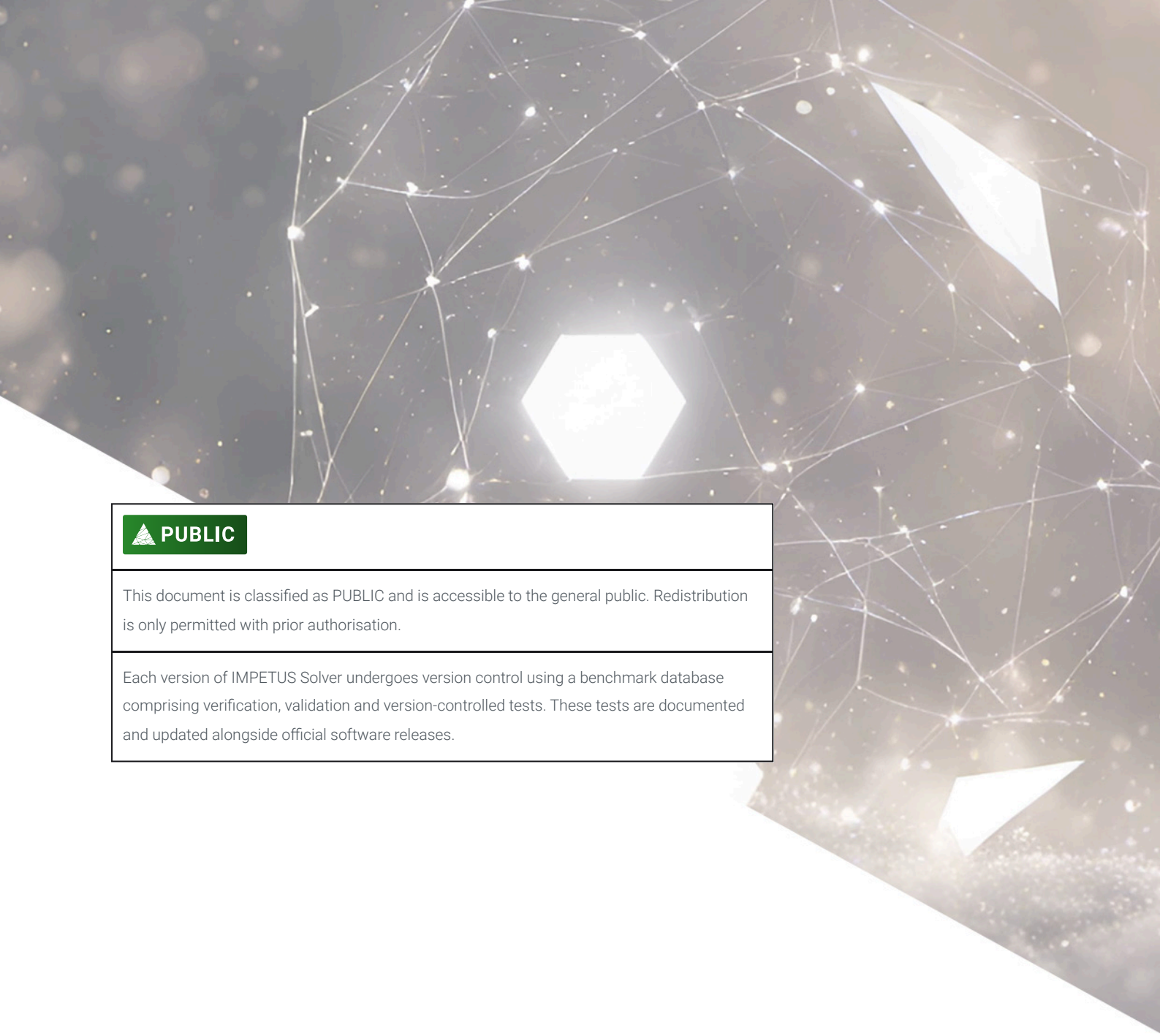


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Each version of IMPETUS Solver undergoes version control using a benchmark database comprising verification, validation and version-controlled tests. These tests are documented and updated alongside official software releases.

Verfication - EFP and SC

Documentation

Version 11.1.0

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IMPETUS
driving precision

Document revisions:

Revision	Date	Comments
0	2026-06-24	First publication

Verfication - EFP and SC

Introduction

This document presents verification of shaped charge and EFP simulations using the software.

Version control

The tests presented in this document are subjected to version control, meaning that the models are run and evaluated prior to release of a new solver. This document is updated in conjunction with official releases of the software.

Verification - Shaped charge and EFP template models

Verification - Shaped charge and EFP template models

This document presents verification tests for shaped charge and EFP models created using IMPETUS parametric templates. The models used for the tests are created using quarter, half and full symmetry. All of the models are created without changing any of the default settings in the templates.

Version control

The tests presented in this document are subjected to version control, meaning that the models are run and evaluated prior to release of a new solver. This document is updated in conjunction with new official releases of the software.

Shaped Charge

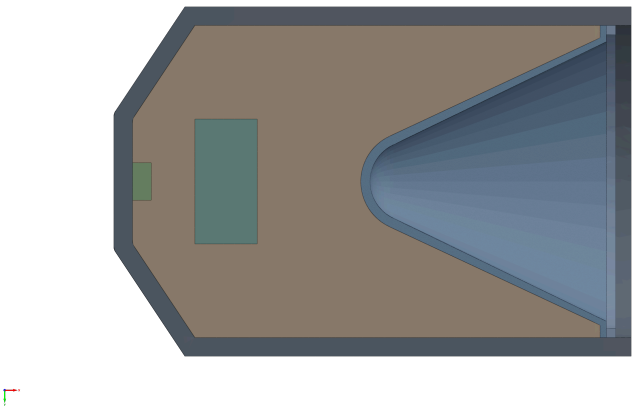


Figure 1. Shaped Charge at initiation, half symmetry.

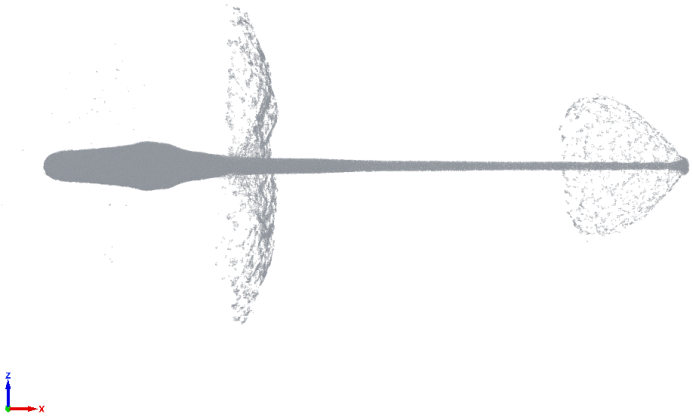


Figure 2. Shaped charge with full symmetry at final state.

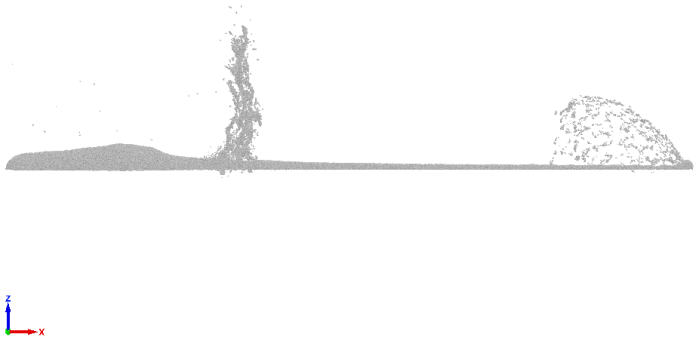


Figure 3. Shaped charge with half symmetry at final state.

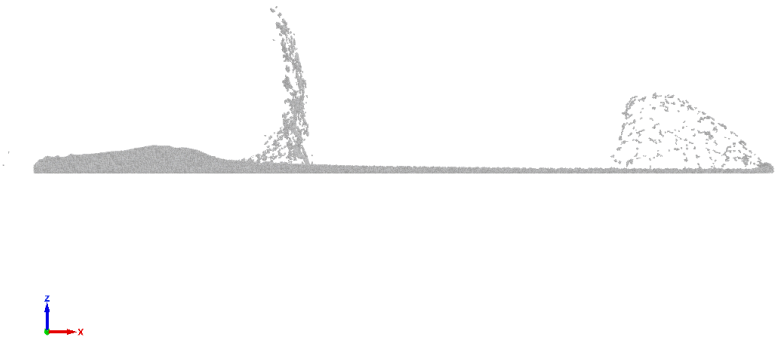


Figure 4. Shaped Charge with quarter symmetry at final state.

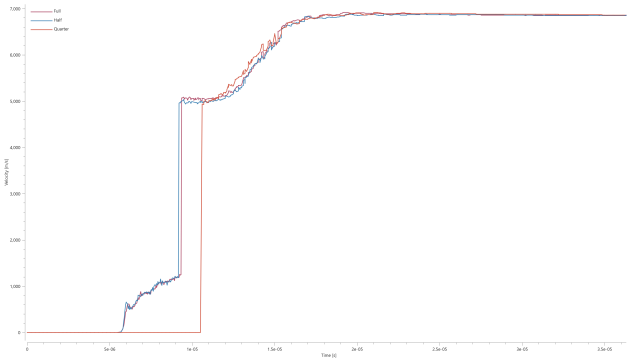


Figure 5. Tip velocity vs. time.

EFP

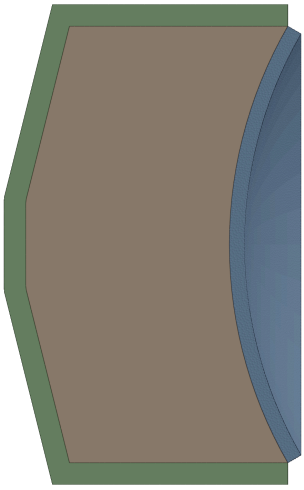


Figure 6. EFP at initiation, half symmetry.

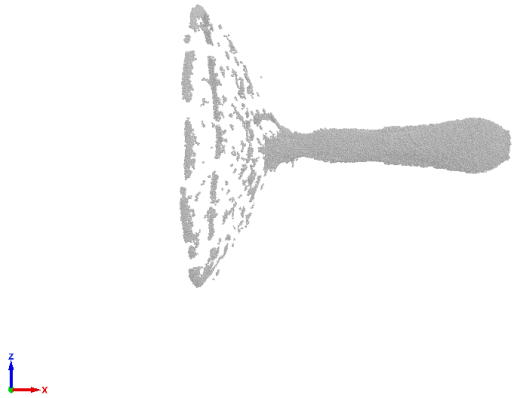


Figure 7. EFP with full symmetry at final state.

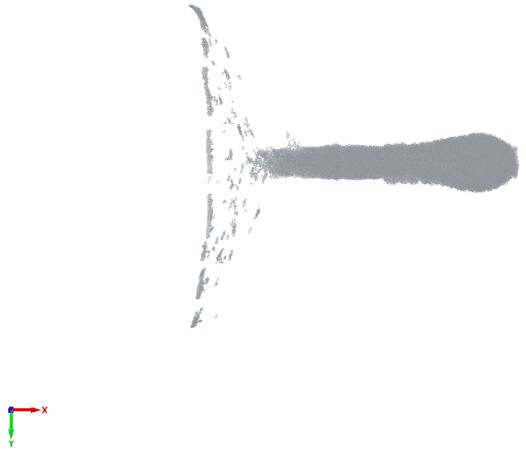


Figure 8. EFP with half symmetry at final state.



Figure 9. EFP with quarter symmetry at final state.

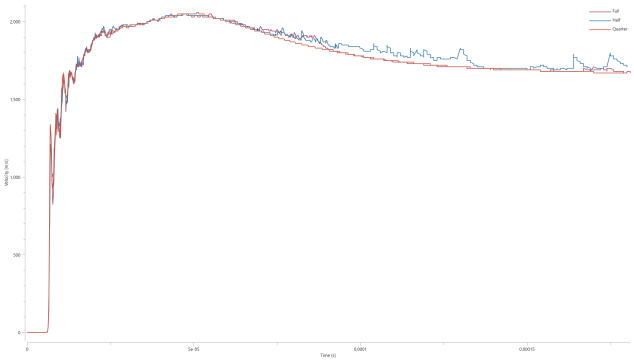


Figure 10. Tip velocity vs. time.

Relevant energy levels and jet tip velocities are checked for version control.

TESTS

This benchmark is associated with 6 tests.