



Ateles Performance Assessment Summary

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The Ateles Audit identified several problems with the code for the provided input. Improvements based on POP suggestions will significantly reduce the runtime of the Ateles code and hence save resources.

The code was found to suffer from excessive load balancing problems for the provided input and a further POP Performance Plan was suggested to narrow down the underlying cause. Suggestions were also made to improve the computational performance by reducing the number of tiny function invocations and minimising duplication of computation where results could be stored and reused.

Ateles is a Finite Element code which uses the Discontinuous Galerkin scheme on top of a distributed parallel octree mesh data structure. It uses static mesh refinement to increase its numerical accuracy. The code is developed by the University of Siegen where it is used for flow simulations.

A full technical report can be found at

https://pop-coe.eu/sites/default/files/pop_files/pop-ar-ateles.pdf

For more information contact: POP team

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