Home

Articles GMD

- Recent final revised papers
- Volumes and issues
- Special issues
- Full text search
- Title and author search

Articles GMDD

Alerts & RSS Feeds

Editorial & Advisory Board

General Information

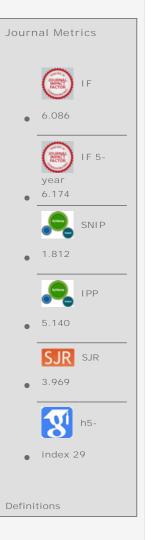
Submission

. .

Print Subscription

Comment on a Paper

<u>Follow</u> @EGU GMD



Geosci. Model Dev., 5, 345-353, 2012 www.geosci-model-dev.net/5/345/2012/ doi:10.5194/gmd-5-345-2012 © Author(s) 2012. This work is distributed under the Creative Commons Attribution 3.0 License.

Article

Metrics

Related Articles

ASAMgpu V1.0 – a moist fully compressible atmospheric model using graphics processing units (GPUs)

S. Horn

Leibniz Institute for Tropospheric Research, Permoserstrasse 15, 04318 Leipzig, Germany

Abstract. In this work the three dimensional compressible moist atmospheric model ASAMgpu is presented. The calculations are done using graphics processing units (GPUs). To ensure platform independence OpenGL and GLSL are used, with that the model runs on any hardware supporting fragment shaders. The MPICH2 library enables interprocess communication allowing the usage of more than one GPU through domain decomposition. Time integration is done with an explicit three step Runge-Kutta scheme with a time-splitting algorithm for the acoustic waves. The results for four test cases are shown in this paper. A rising dry heat bubble, a cold bubble induced density flow, a rising moist heat bubble in a saturated environment, and a DYCOMS-II case.

Citation: Horn, S.: ASAMgpu V1.0 — a moist fully compressible atmospheric model using graphics processing units (GPUs), Geosci. Model Dev., 5, 345-353, doi:10.5194/gmd-5-345-2012, 2012.

