Kellogg's CIG Science Gateway and Community Codes for the Geodynamics Community
Request Summary
Date submitted: Jul 12, 2013

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Request Summary and Awards

Meeting Comments

The total number of SUs requested was a factor of almost 3 greater than available on all systems. After the usual merit-review criteria were applied by the assigned reviewers, and the panel-recommended allocations were determined, the totaled allocations for the cluster systems were found to be oversubscribed by 150M SUs. It was necessary to adjust the recommended allocations to fit within the budget of available SUs according to the formulation in section 6.4.1 of the XSEDE Allocations Policy document (www.xsede.org/web/guest/allocation-policy). Every panel-recommended allocation (derived from the review-recommended allocation during the panel discussion) was included in this reduction. Reductions of up to 40% were imposed on some recommended allocations to obtain the awarded allocation, depending upon the portion of NSF funding and the size of the recommended allocation.

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Title / FOS

Title	CIG Science Gateway and Community Codes for the Geodynamics Community
Request Number	MCA08X011
Request Type	Renewal
Primary Field Of Science	525 - Geophysics

Keywords

Geophysics Seismology Mantle Convection Geodynamo Short and long term tectonics finite elements adaptive mesh refinement scalable physics simulation

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Supporting Grant(s) Information

PI Name	Louise H. Kellogg
Funding Agency	National Science Foundation (NSF)
Funding Agency Division	EAR
Program Officer Name	Robin Reichlin
Program Officer Email	rreichli@nsf.gov
Funding Title	Geoinformatics: Facility Support: Computational Infrastructure for Geodynamics
Award Number	0949446
Awarded Amount	1537500
Percentage of award supporting this request	25
Start Date	07/01/2010
Expiration Date	06/30/2015
Field Of Science	Geophysics
Comment	

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Resources Requested

Please estimate what percentage of the work you expect to do in this allocation will be the following types (the 3 numbers should sum to 100):

- Production (actually doing research): 40
- Exploration/porting (preparing to do research): 40
- Education (teaching others to do research): 20

Please estimate what percentage of the jobs you expect to run in this allocation will be the following types (the 3 numbers should sum to 100):

- Submitted through command line/script: 90
- Submitted using Grid tools (such as GRAM): 10

Please estimate what percentage of the science runs you expect to perform in this allocation will be the following types (the 4 numbers should sum to 100):

- Independent (a job that is not immediately connected to any other job - a job that is artificially broken into chunks by queue limits should still be placed this category): 10
- Independent but related (such as jobs that make up an ensemble or parameter sweeps): 10

- Tightly-coupled (multiple jobs that will run simultaneously): 80

Resource Name	TACC Dell PowerEdge C8220 Cluster with Intel Xeon Phi coprocessors (Stampede)
Resource Requested Amount	880000
Resource Awarded Amount	***729619***

Resource Name	TACC Dell/NVIDIA Visualization and Data Analysis Cluster (Longhorn)
Resource Requested Amount	1000
Resource Awarded Amount	***1000***

Resource Name	TACC Long-term tape Archival Storage (Ranch)
Resource Requested Amount	0
Resource Awarded Amount	***500***

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Abstract

The Computational Infrastructure for Geodynamics (CIG), an NSF center, aims to enhance the capabilities of the geodynamics community through developing software that can be used to address a range of unsolved grand challenge problems in geophysics. CIG supports benchmarking of its codes, conducts training, and offers help to new users by providing small allocations of computation time. These efforts have met with success, and the current CIG compute allocations on the XSEDE infrastructure have been used at a substantial rate. CIG supports the aforementioned efforts in the following areas of activity: mantle dynamics, seismic wave propagation, geodynamo, and crustal and lithospheric dynamics on both million-year and earthquake time-scales.

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