Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Janus II: the new generation Special Purpose Computer for spin-system simulations SERGIO PEREZ-GAVIRO, ARAID Foundation, Intitute for Biocomputation and Physics of Complex Systems, University of Zaragoza, Spain, JANUS COLLABORATION — We present Janus II [1], our second grand challenge of High Performance Computing on Computational Physics. This Special Purpose Computer, recently developed and commissioned by the Janus Collaboration, is based on a Field-Programmable-Gate-Array (FPGA) architecture. Janus II has been designed and developed as a multipurpose reprogramable supercomputer and it is optimized for speeding up the Monte Carlo simulations of a wide class of spin glass models. It builds and improves on the experience of its predecessor,Janus, that has been successfully running physics simulations for the last 6 years. With Janus II will make possible to carry out Monte Carlo simulations campaigns that would take several centuries if performed on currently available computer systems.

[1] The Janus Collaboration, Comp. Phys. Comm, in press (arXiv:1310.1032)

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Date submitted: 15 Nov 2013 Electronic form version 1.4