GRACE 2: Scientific simulations using programmable hardware (Weiterführung)

Initiative: Außergewöhnliches

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Increasingly complex integrated circuits are difficult to use efficiently and their power consumption becomes an issue for large-scale high performance systems. We propose to build a green, powersaving supercomputer to advance selected problems of fundamental physics (relativistic evolution of spinning black holes in galactic nuclei, collapse and star formation in interstellar matter). We envision two systems, a high-end, state of the art production system as well as a more experimental cluster to explore new routes of hardware and software development in computational science and to make them available for practical use. We follow the paradigm of green computing and flexible portable software, which adapts to the hardware, including efficient task managing tools for our key applications approaching exascale computing.

Projektbeteiligte

Prof. Dr. Rainer Spurzem
Universität Heidelberg
Zentrum für Astronomie
Astronomisches Rechen-Institut
Heidelberg

Prof. Dr. Ralf S. Klessen
Universität Heidelberg
Zentrum für Astronomie
Institut für Theoretische Astrophysik (ITA-ZAH)
Heidelberg

Prof. Dr. Reinhard Männer
Universität Heidelberg
Zentrales Institut für Technische Informatik ZITI
Informatik V
Mannheim