SCIENTIFIC COMPUTING AND IMAGING INSTITUTE ▪ UNIVERSITY OF UTAH

Timo Heister Joins the Scientific Computing and Imaging (SCI) Institute as an Assistant Professor of Mathematics.

Timo Heister has joined the University of Utah's Scientific Computing and Imaging (SCI) Institute as an assistant professor of mathematics. The SCI Institute focuses on solving important problems in biomedicine, science, and engineering using computation and is an international research leader in the areas of scientific computing, visualization, and image analysis.

Timo Heister received his PhD in Mathematics from the University of Goettingen in Germany and joined Texas A&M University as a Visiting Assistant Professor from 2011 to 2013. He then became an Assistant Professor at Clemson University before joining the University of Utah in 2018 as an Assistant Professor in Mathematics and a faculty member in the SCI Institute. He is an applied mathematician and a computational scientist. His research centers around numerical analysis and the numerical solution of partial differential equations using the finite element method, which are used as mathematical models throughout the natural and biomedical sciences and engineering.

As one of the principal developers of the open source deal.II (see www.dealii.org) library that supports the creation of finite element codes, his work is used to develop new numerical methods and solve problems across a wide range of scientific disciplines. Timo Heister is involved in various other open source projects used in geosciences (the ASPECT mantle convection code) and solid mechanics.

Timo Heister's research focuses on efficient solvers that scale to massively parallel supercomputers, which makes simulations faster, more reliable, and more accurate. New discretizations for fluid flow problems allow for simulations that better preserve physical properties and give more accurate predictions.

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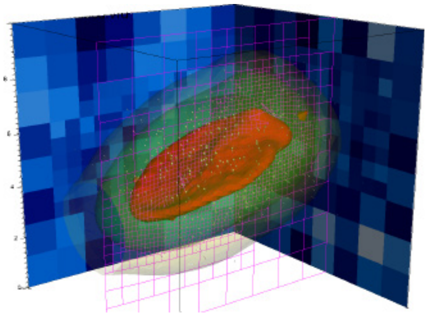
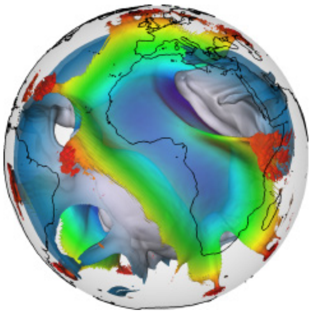
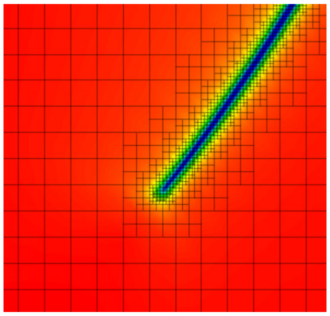


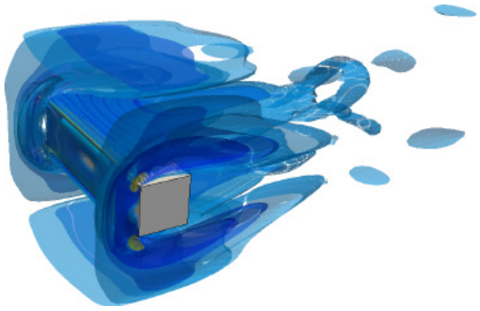
Crack propagation in an heterogeneous, elastic medium



Global convection of the Earth's mantle using the ASPECT code



Adaptive mesh refinement is used to accurately resolve a crack in a material



Vorticity contours of a flow simulation around a square block