

Research Highlight

SPECFEM: Probing Mars interior with 3D seismic wave simulations

[InSight](#) launched on May 5, 2018 from Vandenberg Air Force Base on the coast of California, and successfully landed in the Elysium Planitia, the second largest volcanic region on Mars surface, on November 2, 2018 after a 300-million-mile journey. The mission is the first to gather geophysical measurements from surface-installed instruments to explore the internal structure and dynamics of a solar system object other than the Earth or Moon. Understanding Mars' interior and its dynamics will also help us understand the formation of the Earth and how our planet, together with our solar system, has evolved over time.

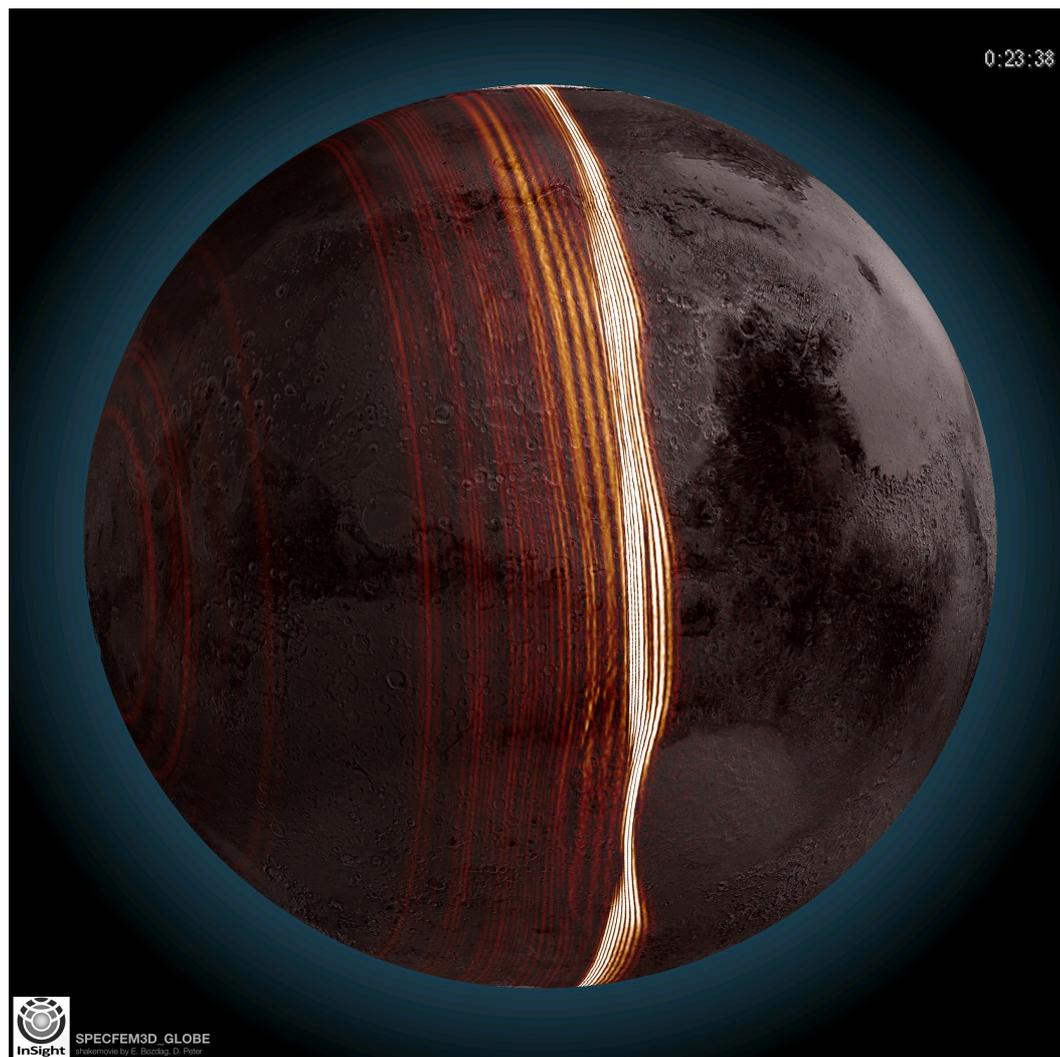


Figure 1. [\[full caption\]](#)

The lander's geophysical payload includes a very broad band seismometer to listen to the seismic activity on Mars. To better characterize and interpret seismic signals recorded by the single broad-band seismometer deployed to Mars, we run numerical seismic wave simulations using a global 3D wave propagation solver, SPECFEM3D_GLOBE (Komatitsch & Tromp 2002). The simulations have been initiated by implementing a 1D reference model for Mars, followed by superimposing topography and crustal thickness variations to analyze the distinct crustal dichotomy between the southern and northern hemispheres specifically on surface waves (Figure 1 & 2). Following Earth ... [\[continued\]](#)

Contributed by Ebru Bozdağ and Daniel Peter

Community Input: Catalyzing Opportunities for Research in Earth Sciences

The National Academies is conducting a study on Catalyzing Opportunities for Research in the Earth Sciences (CORES) for the Division of Earth Sciences at the National Science Foundation. The purpose of the CORES study is to (1) identify a concise set of high-priority scientific questions for the next decade, (2) assess infrastructure needed to address these questions, and (3) determine opportunities for greater collaboration with other NSF divisions and directorates, federal agencies, and domestic and international partners.

The CORES committee strongly feels that this study must be informed by vigorous community input from across the entire spectrum of Earth sciences. Contribute your ideas on upcoming research opportunities [here](#). Deadline is **March 1, 2019**. [\[more info\]](#)

Speaker Series

Do you know someone who would be a great ambassador for CIG research? The CIG Speaker Series is looking for talented speakers who can promote computational modeling in geodynamics and related earth sciences to a broad scientific audience. Send your nominations to speakers@geodynamics.org. More information for speakers and institutions looking for speakers can be found on our website. Deadline is **March 29, 2019**.

[\[more info\]](#)

Mailing List Discontinued

CIG mailing lists have moved to a new open source discussion platform powered by discourse.com. community.geodynamics.org is a civilized place for discussion combining many features of a discussion forum and a mailing list. The forum allows easier searching and tagging of discussion threads. By clicking through the link to join, you will be automatically subscribed to the Announcement forum. To ensure you continue to receive notices of forum topics of interest, remember to configure your profile. Then navigate to the forums of interest. Find the icon "!" to the right of the +New Topic button to select what notifications you wish to receive. All emails sent via the cig-all mailing list are automatically forwarded to Announcement. You do not need to subscribe to both. All current mailing lists with the exception of cig-all are closed and senders to those list will receive auto reply notifications. [\[link\]](#)

In Memorium - Dimitri Komatitsch

It is with great sadness and broken hearts that we let you know about Dimitri's passing away. Dimitri has been the main developer and driving force behind the SPECFEM software codes, a project he dedicated so much time and effort to. Over all these years, he provided constant support to anybody and answered so many questions with joy and knowledge. With his enthusiasm and motivation to improve these codes, they have become a major contribution in computational geosciences for investigating and understanding Earth's structure and subsurface processes.

Dimitri's work paved the way of computational seismology towards high-performance computing, which opened up a whole new branch in the careers of young geophysicists. He leaves behind a project in which we can hardly imagine the size of his determination and willingness to share his efforts.

Contributed by Daniel Peter and Jeroen Tromp. [\[more info\]](#)

Governance

Congratulations to Katie Cooper and re-elected member Louis Moresi who join returning members Claire Currie, Frederik Simons, and Carl Tape on the Executive Committee; and Ebru Bozdog, Krista Soderlund, and Cian Wilson who join Brad Aagard, David Ham, Jessica Irving, Gabriele Morra, and John Rudge on the Science Steering Committee. Many thanks to our past EC, SSC members, Nominations Committee, candidates and Member Representatives for taking part in the governance process. [\[full list\]](#)

2019 Summer Workshops

Never too early to think about summer! CIG summer workshop planning has begun. Registration is now open for the 2019 ASPECT Hackathon May 10 - June 1 in Utah. The 2019 Crustal Modeling Workshop will return to Golden, Colorado June 10-14. Travel support will be available for U.S. participants to attend the [2019 Ada Lovelace Workshop](#). We are in the early planning stages for the 2019 Rayleigh Hackathon; location and date will be announced at a later date. Join our forum to receive announcements for these events. [\[forum\]](#)



Congratulations to Rene Gassmoeller a 2019 Better Scientific Software (BSSw) Fellow. Pictured are the 2018 and 2019 Fellows and Honorable Mentions at the 2019 Exascale Computing Project Annual Meeting in Houston, TX. *photo credit: BSSw* [\[more info\]](#)
[\[BSSw\]](#)

WEBINARS

2019

February 14 - Tanu Malik and Eunseo Choi

March 14 - Mark Ghiorso

April 11 - Cian Wilson

May 9 - Carolina Lithgow-Bertelloni

[More info](#)

[Connect to webinar](#)

MEETINGS

2019

May 21-June 1: ASPECT Hackathon

June 10-14: Crustal Deformation Modeling
Tutorial

August 25-30: Ada Lovelace Workshop

TBD: Rayleigh Hackathon

NEW RELEASES

none



click the icon for citation info

ALLOCATIONS

Stampede2: 19093/85,608 SUs

Comet: 55/500,000 SUs

Comet GPU: 0/15,000 SUs

Oasis: 0/10,000 SUs

Ranch: 10,000 GB

QUICK LINKS

[Submit Publications](#)

[Software](#)

CONTACT US

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