

Climate change: does computer science have the answers?

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Climate change research is a global effort [said Christina Figueras](#), an [UNFCCC](#) official at a meeting of policy makers and ministers in Mexico City in March 2011. She emphasized that worldwide government action was, "needed to stay below the maximum 2⁰C global average temperature rise agreed in Cancun, last December." Scientists also understand climate change calls for collaborative work across geographical boundaries to investigate data from disparate sources. It needs to be seamlessly accessible to all players involved. By enabling the sharing of federated resources anytime, anywhere in the world, e-Infrastructures can make a significant contribution to scientific research.

An [international conference](#) on Climate Change in Trieste, from 16th to 20th May, aims to discuss the potential of e-Infrastructures, to empower climate scientists researching the impact of climate change, and gain from the rising tide of data.

"In order to be able to act and intervene on climate change phenomena, first of all, we have to understand them by means of verifiable data and computing resources" - explained Stefano Cozzini, development scientist at the Italian [Democritos National Simulation Center](#).

Also, the role of grid and HPC environments is high on the agenda. Delegates will showcase success stories and challenges. Importantly, delegates will explore actions needed at both policy and e-Infrastructure deployment levels to enable better collaboration between researchers. Kostas Glinos, Head of Unit for [GÉANT](#) and the European Commission e-Infrastructures [DG Information and Society](#), will be delivering the keynote address at the conference. International policy and funding perspectives will come from [Dr. Rajagopala Chidambaram](#), an internationally renowned Nuclear Physicist who is currently Principal Scientific Adviser of the [Government of India](#) and member of the [Indian Government Cabinet](#).

Advances driven by collaborative EC-funded projects like [PRACE](#), [EGI-InSPIRE](#), [EU-IndiaGRID2](#), [EUMEDGRID-Support](#) are a starting point for deliberating the development of a European and worldwide e-infrastructure for climate change applications. But, a lot of work is still needed to help develop standards and integrate data sets from various sources.

"The conference is an important opportunity to share knowledge on core innovations emerging around this framework and to define the next steps", said [Filippo Giorgi](#), from the [Abdus Salam International Centre for Theoretical Physics](#), who is also the conference host.

The event brings experts to the table from across the globe, to deliver insights on grid technologies for climate change from their own national perspective. Example delegates include Depei Qian, of [Beihang University](#) and Principal Investigator of the [China National Grid](#) (CNGrid) and Diego Carvalho, of [Centro Federal de Educação Tecnológica](#), Brazil among others.

Cozzini concluded, "E-Infrastructures, such as grid technologies, can bring a valuable role, thanks to increased computing capacities and the economies of scale for reducing costs. Computer science and research can work together to understand our world's phenomena: First, to provide instruments and data, and the second to analyze them. This conference is a unique opportunity for computer scientists and climate researchers to physically meet and discuss practical solutions to real problems."

A concerted scientific effort supported by e-infrastructures may go some way in sustaining the momentum that Figueras discussed in Mexico City. Hitherto, Government emission reduction promises are only 60% of what science says is required by 2020 to make this pledge.

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