

# 4TH ANNUAL

## EARTH SYSTEM GRID FEDERATION AND ULTRASCALE VISUALIZATION CLIMATE DATA ANALYSIS TOOLS

### FACE-TO-FACE CONFERENCE

DECEMBER 2014



A GLOBAL CONORTIUM OF GOVERNMENT AGENCIES, EDUCATIONAL INSTITUTIONS, AND COMPANIES DEDICATED TO DELIVERING ROBUST DISTRIBUTED DATA, COMPUTING LIBRARIES, APPLICATIONS, AND COMPUTATIONAL PLATFORMS FOR THE NOVEL EXAMINATION OF EXTREAME-SCALE SCIENTIFIC DATA.

*Partnerships for development of next-generation software for distributed access and analysis of simulated, observed, and reanalysis data from the climate and weather communities.*

**Registration:** <http://www.regonline.com/ESFG-UVCDAT-Conference>

**Conference venue:** Rios-Lovell Winery, 6500 Tesla Rd, Livermore, CA

**Remote participation:** Indicate on registration form that you wish to participate remotely and an email will be sent with information you need to join Webinar.

**Date:** Dec 9, 2014 to Dec 11, 2014—8:00 AM - 6:00 PM PST

**Webinar Logistics:** Please register for 4th Annual Earth System Grid Federation and Ultrascale Visualization Climate Data Analysis Tools Conference on December 9, 10, 11, 2014 8:00 AM PST at:

<https://attendee.gotowebinar.com/register/8109767231900886530>

After registering, you will receive a confirmation email containing information about joining the webinar.

## Joint DOE, NASA, NOAA, NSF, IS-ENES, and ANU/NCI Conference

### Day 1: Tuesday, 9 December 2014 User Feedback and Project Requirements

#### *Session One: Welcome, Safety, Introductions, Opening remarks, and Awards*

08:30 – 09:00	Session Presentations	Presenters	Minutes
08:30 – 08:35	Welcome, logistics and Introductions	Dean N. Williams (DOE/LLNL)	5 min
08:40 – 08:45	DOE opening comments	Dr. Justin Hnilo (DOE/CESD/BER Data and Informatics Program Manager)	5 min
08:50 – 09:00	ESGF & UV-CDAT Awards Ceremony	Dean N. Williams (DOE/LLNL)	10 min

#### *Session Two: ESGF Governance*

09:00 – 09:20	Session Presentation	Presenter	Minutes
09:00 – 09:10	ESGF Governance	Dr. Justin Hnilo (DOE/BER/CESD Data and Informatics Program Manager)	10 min
09:10 – 09:20	Discussion of governance		10 min

#### *Session Three: Project Feedback and Requirements*

09:20 – 14:55	Session Presentations	Presenters	Minutes
09:20 – 09:35	Significance of the User Support Process in ESGF ( <b>Session's Keynote</b> )	Hashim Chunpir (IS-ENES2/DKRZ)	15 min
09:40 – 09:50	WGCM Infrastructure Panel Requirement	Karl Taylor (DOE/LLNL)	10 min

	<b>(Session's Keynote)</b>		
09:55 – 10:05	CMIP6 and MIPs	Karl Taylor (DOE/LLNL)	10 min
10:10 – 10:20	High-End Computing Program Manager and Weather Focus Area Program Scientist	Tsendgar Lee (NASA/HQ)	10 min
10:25 – 10:35	Collaborative REAnalysis Technical Environment-Intercomparison Project (CREATE-IP) and ana4MIPs: Enhancing Access to Reanalysis Using ESGF	Jerry Potter (NASA/GSFC)	10 min
10:40 – 10:50	ESGF Functionality Needed for obs4MIPs and Other Data Sets	Robert Ferraro (NASA/JPL)	10 min
<b>10:55 – 11:10</b>	<b>BREAK</b>		<b>15 min</b>
11:10 – 11:20	CORDEX	Sébastien Denvil (IS-ENES2/IPSL)	10 min
11:25 – 11:35	The climate4impact Portal: Bridging the CMIP5 and CORDEX Data Infrastructure to Impact Users	Maarten Plieger (IS-ENES/KNMI)	10 min
11:40 – 11:50	Learning About Data Systems and Data Tools from Practitioner Applications <b>(Set up Go-To-Meeting)</b>	Ricky Rood (NASA/GSFC and the University of Michigan)	10 min
11:55 – 12:05	Model Output Evaluation and Data Dissemination for Seasonal and Shorter Time Scales: NMME and HIWPP	Cecelia DeLuca (NOAA/ESRL) and Eric Nienhouse (NSF/NCAR)	10 min
12:10 – 12:20	The ACME Modeling Project Infrastructure	Dave Bader (DOE/LLNL, ACME Project Council Chair)	10 min
<b>12:25 – 13:25</b>	<b>LUNCH</b>		<b>60 min</b>
13:25 – 13:35	A User's Perspective on Acquisition and Management of CMIP5 Data	Jennifer Adams (NOAA/COLA)	10 min
13:40 – 13:50	The GeoMIP perspective on interactions with ESGF <b>(Set up Go-To-Meeting)</b>	Ben Kravitz (DOE/PNNL)	10 min
13:55 – 14:55	<b>Discussion of project feedback and requirements</b>		<b>60 min</b>

**Session Four: Modeling and Data Center Requirements**

<b>14:55 – 16:45</b>	<b>Session Presentation</b>	<b>Presenters</b>	<b>Minutes</b>
14:55 – 14:10	Modeling and Data Center Requirements <b>(Session's Keynote)</b>	Sébastien Denvil (IS-ENES2/IPSL)	15 min
14:15 – 14:20	Australia (ANU/NCI)	Ben Evans (NCI/ANU)	5 min
14:25 – 14:30	IPCC-DDC (DKRZ)	Martina Stockhause (WDCC/DKRZ)	5 min
14:35 – 14:40	France (IPSL)	Sébastien Denvil (IS-ENES2/IPSL)	5 min
14:45 – 14:50	ESGF Node in China for MIPs (CMIP5, GeoMIP, and Mics Asia)	Baogang Zhang, China (Beijing Normal University)	5 min
14:55 – 15:00	Experiences with the ESGF Data Portal at CCCma <b>(Set up Go-To-Meeting)</b>	Slava Kharin (Canadian Centre for Climate Modelling and Analysis)	5 min

15:05 – 15:10	UK (BADC)	Phil Kershaw (IS-ENES2/BADC)	5 min
15:15 – 15:20	NSF NCAR Data Center Requirements: Reducing Barriers to Community Data Products (USA)	Eric Nienhouse (NSF/NCAR)	5 min
15:25 – 15:40	<b>BREAK</b>		15 min
15:40 – 15:45	GFDL model data requirements and ESGF (USA)	Serguei Nikonov (NOAA/GFDL)	5 min
15:50 – 16:45	<b>Discussion of modeling and data center requirements</b>		55 min

**Session Five: Network Requirements**

16:45 – 17:30	Session Presentation	Presenter	Minutes
16:45 – 17:05	Network Requirements— ICNWG (Session's Keynote)	Eli Dart (DOE/ESnet)	20 min
17:10 – 17:20	<b>Discussion of network requirements</b>		10 min
17:20 – 17:30	<b>Closing comments and Adjourn Day1</b>		10 min
18:30 – 21:30	<b>Workshop dinner: self-organizing</b>		3 hours

**Day 2: Wednesday, 10 December 2014  
ESGF and UV-CDAT Technical Presentations and Discussions**

08:30 – 08:35	Safety, recap of day 1, introduction of day 2	Dean N. Williams (DOE/LLNL)	5 min
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**Session Six: ESGF Technical Development**

08:35 – 12:35	Session Presentations	Presenters	Minutes
08:35 – 08:45	Technical Developments for the Community (Session's Keynote)	Dean N. Williams (DOE/LLNL)	10 min
08:50 – 09:00	ESGF Installation Working Team	Nicolas Carenton (IS-ENES/IPSL) and Prashanth Dwarakanath (Linköping University)	10 min
09:05 – 09:15	CoG: The New ESGF User Interface	Luca Cinquini (NOAA/ESRL)	10 min
09:20 – 09:30	Publication as a Service: Globus Publish to ESGF	Sasha Ames (DOE/LLNL) and Rachana Ananthkrishnan (Univ. of Chicago)	10 min
09:35 – 09:45	Quality Control Working Team: esgf-qcwt	Martina Stockhause and Katharina Beger (IS-ENES2/DKRZ)	10 min
09:50 – 10:00	ESGF IdEA—Developments with ESGF's system for Identity, Entitlement and Access Management	Phil Kershaw (IS-ENES/BADC) and Rachana Ananthkrishnan (Univ. of Chicago)	10 min
10:05 – 10:15	ESGF Transfer	Rachana Ananthkrishnan and Eric Blau (Univ. of Chicago)	10 min
10:20 – 10:35	<b>BREAK</b>		15 min
10:35 – 10:45	Automated Replication and Versioning	Stephen Kindermann and Tobias Weigel (IS-ENES2/DKRZ)	10 min
10:50 – 11:00	The ESGF Desktop: A Web-Desktop Interface to the ESGF	P. Nassisi, Sandro Fiore and Giovanni Aloisio (IS-ENES2/CMCC)	10 min

	Monitoring Infrastructure		
11:05 – 11:15	Monitoring the Earth System Grid Federation Through the ESGF Dashboard	P. Nassisi, Sandro Fiore and Giovanni Aloisio (IS-ENES2/CMCC)	10 min
11:20 – 11:30	Improved Usability and Support: esgf-swt	Matthew Harris (DOE/LLNL)	10 min
11:35 – 11:45	Revisiting the ESGF Node Manager for Federation Scalability	Prashanth Dwarakanath (Linköping University) and Sasha Ames (DOE/LLNL)	10 min
11:50 – 12:00	ESGF Metadata Search Evolution: esgf-mswt	Luca Cinquini (NASA/JPL)	10 min
12:05 – 12:15	Making the Case for the ESGF and Apache: Long-Term Software Stewardship	Chris Mattmann (NASA/JPL)	10 min
12:20 – 12:35	<b>Discussion of ESGF development priorities and plans</b>		15 min
12:35 – 13:35	<b>LUNCH</b>		60 min

**Session Seven: UV-CDAT Technical Development**

13:35 – 17:50	Session Presentations	Presenters	Minutes
13:35 – 13:50	ESGF Compute Working Team (ESGF-CWT): Distributed Analytics Application Programming Interface (API) <b>(Session's Keynote)</b>	Dan Duffy (NASA/JPL)	15 min
13:55 – 14:05	ESGF Compute Node API	Charles Doutriaux (DOE/LLNL)	10 min
14:10 – 14:20	Diagnostics: acme-dwt	Jeff Painter (DOE/LLNL), Brian Smith (DOE/ORNL) and Jim McEnerney (DOE/LLNL)	10 min
14:25 – 14:40	<b>BREAK</b>		15 min
14:40 – 14:50	Diagnostics and Web Informatics Support Infrastructure	Brian Smith	10 min
14:55 – 15:05	ACME Exploratory Analysis and Diagnostics Viewer	John Harney (ORNL/DOE)	10 min
15:10 – 15:20	On Demand Data Reordering for Remote Data Processing and Exploration	Timo Bremer (LLNL/DOE)	10 min
15:25 – 15:35	ESGF Analysis and Visualization: Challenges and Opportunities	Roland Schweitzer (NOAA/PMEL) Kevin O'Brien (NOAA/PMEL)	10 min
15:40 – 15:50	Web-based Visualization: Overview of Client and Server Side Techniques and their Use in GeoJS and CDATWeb	Aashish Chaudhary (Kitware)	10 min
15:55 – 16:05	Ultrascale Climate Data Visualization and Analysis Using UV-CDAT and DV3D	Tom Maxwell (NASA/Goddard)	10 min
16:10 – 16:20	Workflow and Testing for Modern Software	Aashish Chaudhary (Kitware)	10 min
16:25 – 16:35	GIS Capabilities in UV-CDAT	Ben Koziol (NOAA/ESRL)	10 min
16:40 – 17:00	<b>Discussion of Analysis development priorities and plans</b>		20 min
17:00 – 17:05	<b>Closing comments and Adjourn Day2</b>		5 min
18:30 – 21:30	<b>Workshop dinner: self-organizing</b>		3 hours

**Day 3: Thursday, 11 December 2013**  
**ESGF and UV-CDAT Technical Presentations and Discussions**  
**Technical Interoperability Discussions**

08:30 – 08:35	Safety, recap of day 1 and 2, introduction of final day 3	Dean N. Williams (DOE/LLNL)	5 min
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**Session Eight: Other Related Community Contributions**

<b>08:35 – 16:15</b>	<b>Session Presentations</b>	<b>Presenters</b>	<b>Minutes</b>
08:35 – 08:45	ES-DOC <b>(Set up Go-To-Meeting)</b>	Mark Greenslade (IS-ENES/IPSL)	10 min
08:50 – 09:00	Controlled Vocabulary (Search) <b>(Set up Go-To-Meeting)</b>	Mark Greenslade (IS-ENES/IPSL)	10 min
09:05 – 09:15	System for Offline Data Access (SODA)	Prashanth Dwarakanath (Linköping University)	10 min
09:20 – 09:30	Climate and Forecast (CF) Conventions	Karl Taylor, Jeff Painter (DOE/LLNL)	10 min
09:35 – 09:45	Preparing CMOR for CMIP6	Charles Doutriaux and Karl Taylor (DOE/LLNL)	10 min
09:50 – 10:00	Ophidia: A Big Data Analytics Framework for eScience	Giovanni Aloisio and Sandro Fiore (IS-ENSE/CMCC)	10 min
10:05 – 10:15	JASMIN: Cloud Computing System	Phil Kershaw (IS-ENES/BADC)	10 min
<b>10:20 – 10:35</b>	<b>BREAK</b>		<b>15 min</b>
10:35 – 10:55	ESGF in an OpenStack Cloud	Ben Evans (ANU/NCI)	10 min
11:00 – 11:10	Requirements for a Biology node on ESGF	Patrik D'haeseleer and Sasha Ames (DOE/LLNL)	10 min
11:15 – 12:15	<b>Discussion of other related community contributions</b>		60 min
<b>12:15 – 13:15</b>	<b>LUNCH</b>		<b>60 min</b>
13:15 – 14:15	<b>Software demonstrations</b>		60 min
14:15 – 15:15	<b>TEAM BREAKOUTS</b>		60 min
15:15 – 16:00	<b>TEAM REPORT BACK</b>		45 min
16:00 – 16:10	<b>Open Discussion: Workshop Feedback &amp; Collaboration Opportunities</b>		10 min
16:10 – 16:15	<b>Closing Remarks and Adjourn Conference</b>		5 min
16:15 – 17:00	<b>(Optional) Working Group Breakout Sessions Continue</b>		45 min