AGU 2016 Fall Meeting

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Earth and Space Science Informatics Sessions

IN11E Architecture and Integration Testbed for Earth/Space Science Cyberinfrastructures I

- IN11E-01 ECITE: A Testbed for Assessment of Technology Interoperability and Integration with Architecture Components (Invited) (Invited)
  Sara J Graves1, Ken Keiser1, Emily Law2, Chaowei Phil Yang3 and S. George Djorgovski4, (1)University of Alabama in Huntsville, Huntsville, AL, United States, (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (3)George Mason University Fairfax, Fairfax, VA, United States, (4)California Institute of Technology, Pasadena, CA, United States

IN11F Intelligent Systems for Geosciences: Practices, Technologies, and Applications of Advanced Reasoning that Are Defining New Frontiers and Accelerating Scientific Discovery Posters (Lightning)

- IN13C-1668 Real-Time Mapping Spectroscopy on the Ground, in the Air, and in Space (Invited)
  David R Thompson1, Abigail Allwood2, Steve Chien2, Robert O Green3 and David S Wettermann4, (1)Jet Propulsion Laboratory, California Institute of Technology, Imaging Spectroscopy, Pasadena, CA, United States, (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, Pasadena, CA, United States, (4)NASA Headquarters, Washington, DC, United States

IN11A Advanced Information Systems to Support Climate Projection Data Analysis I Posters

- IN11A-1613 Climate Data Analytics Workflow Management
  Jia Zhang1, Seungho Lee2, Lei Pan2, Chris A Mattmann3 and Tengdar J Lee4, (1)Carnegie Mellon University Silicon Valley, Moffett Field, CA, United States, (2)Jet Propulsion Laboratory, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (4)NASA Headquarters, Washington, DC, United States

IN11A-1615 Analysis of Sea Level Rise in Action
  Kevin Michael Gill1, Thomas Huang2, Nga T Quach2 and Carmen Boening2, (1)Jet Propulsion Laboratory, Pasadena, CA, United States, (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN11B Achieving Deep Learning by Systemizing Machine Learning with Big Data Engines I Posters

- IN11B-1625 The ClearEarth Project: Preliminary Findings from Experiments in Applying the CLEARTK NLP Pipeline and Annotation Tools Developed for Biomedicine to the Earth Sciences
  Ruth Duer1, Anne Thessen1, Chris J Jenkins2, Martha Palmer3 and Skatje Myers4, (1)Ronin Institute for Independent Scholarship, Westminster, CO, United States, (2)Organization Not Listed, Washington, DC, United States, (3)University of Colorado at Boulder, Linguistics, Boulder, CO, United States, (4)University of Colorado at Boulder, Computer Science, Boulder, CO, United States

- IN11B-1632 A Rules-Based Service for Suggesting Visualizations to Analyze Earth Science Phenomena
  Anirudh Prabhu1, Stephan Zednik1, Peter Arthur Fox1, Rahul Ramachandran2, Manil Maskey3, Chung-Lin Shie4 and Suhung Sheng5, (1)Rensselaer Polytechnic Institute, Troy, NY, United States, (2)NASA Marshall Space Flight Center, Huntsville, AL, United States, (3)University of Alabama in Huntsville, Huntsville, AL, United States, (4)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (5)George Mason University Fairfax, Fairfax, VA, United States

IN11A-1615 Analysis of Sea Level Rise in Action
  Kevin Michael Gill1, Thomas Huang2, Nga T Quach2 and Carmen Boening2, (1)Jet Propulsion Laboratory, Pasadena, CA, United States, (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN12A Big Data Analytics I
IN13A Architecture and Integration Testbed for Earth/Space Science Cyberinfrastructures II Posters

- IN13A-1646 Uncoupling File System Components for Bridging Legacy and Modern Storage Architectures Navid Golpayegani1, Milton Halem2, Curt Timnes1, Smriti Prathapan2, Damon N Earp3 and Jihad S Ashkar3, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, Pasadena, CA, United States

IN13B Big Data Analytics II Posters

- IN13B-1655 Demonstrating Condensed Massive Satellite Datasets for Rapid Data Exploration: The MODIS Land Surface Temperatures of Antarctica Glenn Grant1, Dave Galahar1, Qin Lv2, Qi Li2, Rudolf Klucik2 and Cathy Fowler3, (1)National Snow and Ice Data Center, Boulder, CO, United States, (2)University of Colorado Boulder, Boulder, CO, United States, (3)University of Colorado, CIRES, National Snow and Ice Data Center, Boulder, CO, United States

- IN13B-1657 SAR processing in the cloud for oil detection in the Arctic Jessica Garron1, Chris Stoner1 and Franz J Meyer2, (1)Alaska Satellite Facility, Fairbanks, AK, United States, (2)University of Alaska Fairbanks, Fairbanks, AK, United States

IN13A-1658 Benchmark Comparison of Cloud Analytics Methods Applied to Earth Observations Christopher Lynnes1, Michael M Little2, Thomas Huang3, Joseph Charles Jacob3, Chaowei Phil Yang4 and Kwo-Sen Ku5, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)NASA Headquarters, Washington, DC, United States, (3)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (4)George Mason University Fairfax, Fairfax, VA, United States, (5)Earth System Science Interdisciplinary Center, COLLEGE PARK, MD, United States

- IN13B-1659 Performance Comparison of Big Data Analytics With NEXUS and Giovanni Joseph Charles Jacob1, Thomas Huang1 and Christopher Lynnes2, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States

- IN13B-1660 Analytics and Visualization Pipelines for Big -Data on the NASA Earth Exchange (NEX) and OpenNEX Ashaish Chaudhary1, Petr Votava2, Ramakrishna R Neman1, Andrew Michaelis2 and Chris Kotfila1, (1)Kitware Inc., Clifton Park, NY, United States, (2)California State University Monterey Bay, Seaside, CA, United States, (3)NASA Ames Research Center, Moffett Field, CA, United States

IN13C Intelligent Systems for Geosciences: Practices, Technologies, and Applications of Advanced Reasoning that Are Defining New Frontiers and Accelerating Scientific Discovery Posters


IN14A Achieving Deep Learning by Systemizing Machine Learning with Big Data Engines II


- IN14A-07 DeepSAT: A Deep Learning Approach to Tree-cover Delineation in 1-m NAIP Imagery for the Continental United States Sangram Ganguly1, Saikat Basu2, Ramakrishna R Neman1, Supratik Mukhopadhyay2, Andrew Michaelis3 and Petr Votava3, (1)NASA Ames Research Center, Moffett Field, CA, United States, (2)Louisiana State University, Computer Science, Baton Rouge, LA, United States, (3)California State University Monterey Bay, Seaside, CA, United States


IN21D New Approaches to Data Discovery Across Geoscience Domains I

- IN21D-01 Heuristics for Relevancy Ranking of Earth Dataset Search Results (Invited) Christopher Lynnes, Patrick Quinn and James Norton, NASA Goddard Space Flight Center, Greenbelt, MD, United States

- IN21D-02 Earthdata Search: Scaling, Assessing, and Improving Relevancy Patrick Quinn1,2, Kathleen Baynes1, Chris Lynnes1, Dana Shum1,3, Jeff Siarto1,2, Jason Gilman1,2 and Christopher Durbin1,3, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)Element 84, Inc., Alexandria, VA, United States, (3)Raytheon Company Riverdale, Riverdale, MD, United States

IN21E Advancing netCDF-CF for the Geoscience Community Posters (Lightning)

- IN21A-1755 Non-Invasive Metadata Augmentation for CF-Compliant Data Ted Habermann and Aleksandar Jelenak, HDF Group, Champaign, IL, United States

- IN21A-1764 Swath Data Representation in netCDF-CF Files Aleksandar Jelenak, HDF Group, Champaign, IL, United States, David Santek, University of Wisconsin Madison, Science and Engineering Center, Madison, WI, United States, Muqin Yang, The HDF Group, Champaign, IL, United States and Ethan Davis, University Corporation for Atmospheric Research, Boulder, CO, United States

IN21B Enabling Cloud Applications for Earth Science Data I Posters

- IN21B-1725 Fast Track to the Cloud: Design Patterns for 12-Factor Earth Sciences Applications Andrew Wayne Pawloski1,2, Brett Dean McLaughlin2, Peter Plotchan3 and Chris Lynnes2, (1)Element 84, Inc., Alexandria, VA, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)Raytheon Company Riverdale, Riverdale, MD, United States

- IN21B-1726 Using Cloud-based Storage Technologies for Earth Science Data Andrew Michaelis1, John Readey2 and Petr Votava1, (1)California State University Monterey Bay, Seaside, CA, United States, (2)HDF Group, Champaign, IL, United States
IN21B-1733 A Cloud-based Infrastructure and Architecture for Environmental System Research  Dali Wang, Yaxing Wei, Mallikarjun Shankar, John Quigley and Bruce E Wilson, Oak Ridge National Laboratory, Oak Ridge, TN, United States

IN21B-1736 Remote-Sensing Data Distribution and Processing in the Cloud at the ASF DAAC  Chris Stoner1, Scott A Arko1, Jeremy B Nicoll2 and Annette L Labelle-Hamer2, (1)Alaska Satellite Facility, Fairbanks, AK, United States, (2)University of Alaska Fairbanks, Fairbanks, AK, United States

IN21B-1740 Hybrid Pluggable Processing Pipeline (HyP3): A cloud-based infrastructure for generic processing of SAR data  Kirk Hogenson1, Scott A Arko1, Brian Buchler2, Raymond Hogenson1,2, Jake Herrmann1,2 and Atticus Geiger1,2, (1)Alaska Satellite Facility, Fairbanks, AK, United States, (2)University of Alaska Fairbanks, Fairbanks, AK, United States

IN21C Benefits and Challenges of Open Source Software and Open Data I Posters

IN21C-1749 Freeing Worldview’s development process: Open source everything!  Taylor Gunnoe, Science Systems and Applications, Inc., Lanham, MD, United States

IN21C-1750 NASA’s Earth Imagery Service as Open Source Software  Cristina De Cesare1, Christian Alarcon1, Thomas Huang1, Joe T Roberts1, Joshua Rodriguez1, Matthew F Cechini2, Ryan A Boller3 and Kathleen Baynes4, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Science Systems and Applications, Inc., Lanham, MD, United States, (3)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (4)Raytheon Company Riverdale, Riverdale, MD, United States

IN21C-1751 The Snow Data System at NASA JPL  Ross Laidlaw1, Thomas H Painter1, Kathryn J Bormann2, Karl Rittger3, Mary J. Brodzik4, McKenzie Skiles5, Annie Bryant Burgess6, Chris A Mattmann2, Paul Ramirez7, Cameron E Goodale2, Michael Joyce1, Lewis John McBibney1, Paul Zimdars2 and Rojeh Yaghoobi2,7, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)National Snow and Ice Data Center, Boulder, CO, United States, (4)University of Colorado at Boulder, Boulder, CO, United States, (5)University of California Los Angeles, Los Angeles, CA, United States, (6)Federal Earth Science Information Partners, Raleigh, NC, United States, (7)Jet Propulsion Laboratory, Pasadena, CA, United States

IN22A Common Data Frameworks for Interdisciplinary Science I

IN22A-03 CEOS WGISS COMMON FRAMEWORK FOR WGISS CONNECTED DATA ASSETS  Yousook Enloe, Science Systems and Applications, Inc., Lanham, MD, United States, Andrew E Mitchell, NASA Goddard Space Flight Center, Greenbelt, MD, United States, Mirko Albani, Organization Not Listed, Washington, DC, United States and Martin Yapur, National Environmental Satellite, Data, and Information Service, Silver Spring, MD, United States

IN22A-06 Public-Private Partnership: Joint recommendations to improve downloads of large Earth observation data  Rahul Ramachandran, NASA Marshall Space Flight Center, Huntsville, AL, United States, Kevin J Murphy, NASA Headquarters, Washington, DC, United States, Kathleen Baynes, Raytheon Company Riverdale, Riverdale, MD, United States and Christopher Lynnes, NASA Goddard Space Flight Center, Greenbelt, MD, United States

IN23E Benefits and Challenges of Open Source Software and Open Data II

IN23E-06 Finding geospatial pattern of unstructured data by clustering routes  Maziyar Boustan1, Chris A Mattmann2, Paul Ramirez3 and Wayne Burk3, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, Pasadena, CA, United States

IN23E-08 Search Analytics: Automated Learning, Analysis, and Search with Open Source  Kyle Hundman1, Chris A Mattmann1, Jason Hyon1 and Paul Ramirez2, (1)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, Pasadena, CA, United States

IN23A Advancing netCDF-CF for the Geoscience Community Posters

IN23A-1755 Non-invasive Metadata Augmentation for CF-Compliant Data  Ted Habermann and Aleksandar Jelenak, HDF Group, Champaign, IL, United States

IN23A-1764 Swath Data Representation in netCDF-CF Files  Aleksandar Jelenak, HDF Group, Champaign, IL, United States, David Santek, University of Wisconsin Madison, Space Science and Engineering Center, Madison, WI, United States, Muqun Yang, The HDF Group, Champaign, IL, United States and Ethan Davis, University Corporation for Atmospheric Research, Boulder, CO, United States

IN23B New Approaches to Data Discovery Across Geoscience Domains II Posters

IN23B-1773 Towards improving searches on the NASA’s Distributed Active Archive Centers (DAACs)  Kim D Whitehall1, Hampapuram Ramapriyan2, Sirl-Jodha S Khalsa3, Christopher Lynnes4, Lewis John McBibney5, Edward M Armstrong5 and The Earth Science Data System Working Group (ESDSWG) Search Relevancy Year 1 group, (1)Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Science Systems and Applications, Inc., Lanham, MD, United States, (3)University of Colorado at Boulder, Boulder, CO, United States, (4)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (5)NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN23C Common Data Frameworks for Interdisciplinary Science II Posters

IN23C-1780 The HDF Data Format: High Performance Interoperability for Earth Science Communities  Lindsay A Powers1, Ted Habermann1, John Kozimor2 and Sean Gordon3, (1)HDF Group, Champaign, IL, United States, (2)Organization Not Listed, Washington, DC, United States, (3)University of Illinois at Urbana Champaign, Urbana, IL, United States

IN23C-1781 Evaluating and Evolving Metadata in Multiple Dialects  John Kozimor1, Ted Habermann1, Lindsay A Powers1 and Sean Gordon2, (1)HDF Group, Champaign, IL, United States, (2)University of Illinois at Urbana Champaign, Urbana, IL, United States

IN23C-1784 Metrics: A Synoptic Analysis of User Data and Service Usage at GES DISC  Steven J Kemple1, Chung-Lin Shie2, Gary T Alcott2, Guang-Dih Lei1 and Elaine Vadnais1, (1)NASA Goddard Space Flight Center, GES DISC, Greenbelt, MD, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)University of Colorado at Boulder, Boulder, CO, United States, (4)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (5)NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN23C-1785 Do Community Recommendations Improve Metadata?  Sean Gordon1, Ted Habermann1, Matthew B. Jones2, Ben Leinfelder3, Bryce Mecum3, Lindsay A Powers1 and Peter Slaughter3, (1)HDF Group, Champaign, IL, United States, (2)University of California Santa Barbara, Santa Barbara, CA, United States, (3)National Center for Ecological Analyze and Synthesis, Santa Barbara, CA, United States


IN22B-1740 Hybrid Pluggable Processing Pipeline (HyP3): A cloud-based infrastructure for generic processing of SAR data  Kirk Hogenson1, Scott A Arko1, Brian Buchler2, Raymond Hogenson1,2, Jake Herrmann1,2 and Atticus Geiger1,2, (1)Alaska Satellite Facility, Fairbanks, AK, United States, (2)University of Alaska Fairbanks, Fairbanks, AK, United States

IN21B-1739 A Cloud-based Infrastructure and Architecture for Environmental System Research  Dali Wang, Yaxing Wei, Mallikarjun Shankar, John Quigley and Bruce E Wilson, Oak Ridge National Laboratory, Oak Ridge, TN, United States

IN21B-1736 Remote-Sensing Data Distribution and Processing in the Cloud at the ASF DAAC  Chris Stoner1, Scott A Arko1, Jeremy B Nicoll2 and Annette L Labelle-Hamer2, (1)Alaska Satellite Facility, Fairbanks, AK, United States, (2)University of Alaska Fairbanks, Fairbanks, AK, United States

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IN21C Benefits and Challenges of Open Source Software and Open Data I Posters

IN21C-1749 Freeing Worldview’s development process: Open source everything!  Taylor Gunnoe, Science Systems and Applications, Inc., Lanham, MD, United States

IN21C-1750 NASA’s Earth Imagery Service as Open Source Software  Cristina De Cesare1, Christian Alarcon1, Thomas Huang1, Joe T Roberts1, Joshua Rodriguez1, Matthew F Cechini2, Ryan A Boller3 and Kathleen Baynes4, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Science Systems and Applications, Inc., Lanham, MD, United States, (3)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (4)Raytheon Company Riverdale, Riverdale, MD, United States

IN21C-1751 The Snow Data System at NASA JPL  Ross Laidlaw1, Thomas H Painter1, Kathryn J Bormann2, Karl Rittger3, Mary J. Brodzik4, McKenzie Skiles5, Annie Bryant Burgess6, Chris A Mattmann2, Paul Ramirez7, Cameron E Goodale2, Michael Joyce1, Lewis John McBibney1, Paul Zimdars2 and Rojeh Yaghoobi2,7, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)National Snow and Ice Data Center, Boulder, CO, United States, (4)University of Colorado at Boulder, Boulder, CO, United States, (5)University of California Los Angeles, Los Angeles, CA, United States, (6)Federal Earth Science Information Partners, Raleigh, NC, United States, (7)Jet Propulsion Laboratory, Pasadena, CA, United States
IN23C-1788 An Assessment of the Evolving Common Metadata Repository Standards for Airborne Field Campaigns
Emily Ann Northup1, Gao Chen1, Amanda Benson Early1, Aubrey Lee Beach I11, Jeff Walter1 and Helen Conover2, (1)NASA Langley Research Center, Atmospheric Science Data Center, Hampton, VA, United States, (2)Univ of Alabama Huntsville, Huntsville, AL, United States

IN23C-1789 Use Cases of airborne in-situ and remote sensing data sets for assessing proposed collection-level metadata models

IN24A Enabling Cloud Applications for Earth Science Data II

IN24A-01 On the Large-Scaling Issues of Cloud-based Applications for Earth Science Dat (Invited)
Hook Hua, Jet Propulsion Laboratory, Pasadena, CA, United States

IN24A-06 Lessons Learned while Exploring Cloud-Native Architectures for NASA EOSDIS Applications and Systems
Daniel Plone, Element 84, Inc., Alexandria, VA, United States

IN31D Collaborations, Partnerships, and Alliances that Are Building, Sustaining, and Stewarding Data and Research Infrastructures in Support of the New Era of the Big Data Transdisciplinary World I Posters

IN31D-1787 Data and Metadata Brokering – Lessons Learned from the BCube Project
Siri-Jodha S Khalsa, University of Colorado at Boulder, Boulder, CO, United States

IN31D-1790 Managing Sustainable Data Infrastructures: The Gestalt of EOSDIS
Jeanne Behnke1, Francis E Lindsay2, Dawn R Lowe1, Andrew E Mitchell1 and Christopher Lynnes1, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)NASA Headquarters, Washington, DC, United States

IN32A Near Real-Time Data for Earth Science and Space Weather Applications II Posters

IN32A-01 Outcomes of a NASA Workshop to Develop a Portfolio of Low Latency Datasets for Time-Sensitive Applications
Diane Davies1,2, Molly Elizabeth Brown3, David S Green4, Karen Michael5, Amber Jeanine Sojais, John J Murray6 and Christopher Owen Justice7, (1)Trigg-Davies Consulting Ltd, Malvern, Worcs, United Kingdom, (2)Science Systems and Applications, Inc., Lanham, MD, United States, (3)University of Maryland College Park, Department of Geographical Sciences, College Park, MD, United States, (4)NASA Headquarters, Washington, DC, United States, (5)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (6)NASA Langley Research Center, Hampton, VA, United States, (7)University of Maryland College Park, College Park, MD, United States

IN32A-07 Rapid SAR and GPS Measurements and Models for Hazard Science and Situational Awareness
Susan E Owen1, Sang-Ho Yun2, Hook Hua1, Piyush S. Agrawal3, Zhen Liu2, Angelina W Moore1, Paul Alan Rosen1, Mark Simons4, Frank Webb5, Justin Linick1, Eric Jameson Fielding6, Paul Lundgren1, Gian Franco Sacco2, Jascha Pole7 and Gerald Maman1, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (4)California Institute of Technology, Pasadena, CA, United States, (5)JPL/NASA/Caitech, Pasadena, CA, United States, (6)Jet Propulsion Lab Caltech, Pasadena, CA, United States, (7)California State Polytechnic University Pomona, Pomona, CA, United States

IN33B Near Real-Time Data for Earth Science and Space Weather Applications II Posters

IN33B-1811 Let our powers combine! Harnessing NASA’s Earth Observatory Natural Event Tracker (EONET) in Worldview
Mininnie Wong1, Kevin Ward2, Ryan A Boller2, Taylor Gunnoe1, Kathleen Baynes2 and Benjamin A King1, (1)Science Systems and Applications, Inc., Lanham, MD, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States

IN33B-1814 Improvements and Additions to NASA Near Real-Time Earth Imagery
Matthew F Cechin1, Ryan A Boller2, Kathleen Baynes3, Jeffrey E Schmalz2, Alexander P De Luca1, Jerome King1, Charles K Thompson4, Joe T Roberts4, Joshua Rodriguez5, Taylor Gunnoe1, Mininnie Wong1, Christian Alarcon4, Cristina De cesare4 and Natalie N Pressley1, (1)Science Systems and Applications, Inc., Lanham, MD, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)Raytheon Company Riverdale, Riverdale, MD, United States, (4)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (5)Jet Propulsion Laboratory, Pasadena, CA, United States, (6)Jet Propulsion Laboratory, Pasadena, CA, United States

IN33B-1822 The EOSDIS Products Usability for Disaster Response
Durga N Kafle1,2, Zhen Liu2, Angelyn W Moore1, Paul Alan Rosen1, Mark Simons4, Frank Webb5, Justin Linick1, Eric Jameson Fielding6, Paul Lundgren1, Gian Franco Sacco2, Jascha Pole7 and Gerald Maman1, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)California Institute of Technology, Pasadena, CA, United States, (4)Caltech/NASA/GLSeck, Pasadena, CA, United States, (5)JPL/NASA/Caitech, Pasadena, CA, United States, (6)Jet Propulsion Lab Caltech, Pasadena, CA, United States, (7)California State Polytechnic University Pomona, Pomona, CA, United States

IN41D Persistent Identification, Publication, and Trustworthy Management of Research Resources I

IN41D-03 Repository Services and the Challenge of Trustworthiness 131836 (Invited)
Ruth Duer, Ronin Institute for Independent Scholarship, Westminster, CO, United States

IN41D-05 The IceBridge Portal - Automated Metadata Generation for Enhanced Data Access
Steve Tanner1, Mark Schwab2, Kevin Beam3, Jeffrey S Deems1 and Amy Fitzgerrell1, (1)National Snow and Ice Data Center, Boulder, CO, United States, (2)Raytheon Company Boulder, Boulder, CO, United States, (3)Cires, Boulder, CO, United States

IN41B Bridging the Gap between Earth Science Open Data Producers and Consumers: Success Stories and New Challenges Posters

IN41B-1660 An Innovative Open Data-driven Approach for Improved Interpretation of Coverage Data at NASA JPL’s PO.DAAC
Lewis John McGBinney and Edward M Armstrong, NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN41B-1662 Eartheas Search Client Usability Study: Improving Client Usability to Increase Data Discoverability and Accessibibility
Mark Reese1, Jeff Siarto2, Stephen W Berrick3, Kathleen Baynes4, Dana Shum4 and Peter Plofchan4, (1)Element 84, Inc., Alexandria, VA, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)NASA Goddard Space Flight Center, ESDIS Project Office, Greenbelt, MD, United States, (4)Raytheon Company Riverdale, Riverdale, MD, United States

IN41B-1663 Introducing a Web API for Dataset Submission into a NASA Earth Science Data Center
David F Moroni, NASA Jet Propulsion Laboratory, Pasadena, CA, United States, Nga Quach, Jet Propulsion Laboratory, Pasadena, CA, United States and Westcott Francis-Curry, Columbus Technologies and Services, Inc., Jet Propulsion Laboratory, Pasadena, CA, United States

IN41C Managing Earth Science Data Quality Information for the Benefit of Users I Posters
IN43D Managing Earth Science Data Quality Information for the Benefit of Users II

- IN43D-01 International Metadata Standards and Enterprise Data Quality Metadata Systems (Invited) Ted Habermann, The HGF Group, Champaign, IL, United States

IN43A Reproducible Research in Geosciences with Emphasis on Provenance of Information as an Essential Component II Posters

- IN43A-1681 Using Docker Containers to Extend Reproducibility Architecture for the NASA Earth Exchange (NEX) Petr Votava, NASA Ames Research Center, Moffett Field, CA, United States; University Corporation at Monterey Bay, Seaside, CA, United States and Andrew Michaelis, California State University Monterey Bay, Seaside, CA, United States

IN43B Persistent Identification, Publication, and Trustworthy Management of Research Resources II Posters

- IN43B-1688 Stewardship of NASA’s Earth Science Data and Ensuring Long-Term Active Archives Hampapuram Ramapriyan, Science Systems and Applications, Inc., Lanham, MD, United States and Jeanne Behnke, NASA Goddard Space Flight Center, Greenbelt, MD, United States
- IN43B-1697 Evolving a NASA Digital Object Identifiers System with Community Engagement Lalit Wanchoo1,2 and Nathan James1,1 NASA Goddard Space Flight Center, Greenbelt, MD, United States; (2)Adnet Systems, Lanham, MD, United States
- IN43B-1698 Persistent Identifiers for Data Products: Adoption, Enhancement, and Use Robert R Downs, Joachim Schumacher, John Scialdone and Merlie Hansen, Columbia University of New York, Center for International Earth Science Information Network (CIESIN), Palisades, NY, United States

IN43C Knowledge Representation Frameworks: The Foundation for Achieving Interoperability Posters

- IN43C-1707 Formalizing An Approach to Curate the Global Change Master Directory (GCMD)’s Controlled Vocabularies (Keywords) Through a Keyword Governance Process and Community Involvement Tyler Stevens, NASA Goddard Space Flight Center, Greenbelt, MD, United States
- IN43C-1709 Making Interoperability Easier with the NASA Metadata Management Tool Dana Shum, Raytheon Company Riverdale, Riverdale, MD, United States

PA43A Making an Impact: Stories, Tips, and Lessons Learned from Collaborating with Communities III Posters

- PA43A-2183 CHARIS (Contribution to High Asia Runoff from Ice and Snow) Lessons Learned in Capacity-Building for Hydrological Sciences with Asian Partner Communities Mary J. Brodzik1, Richard L Armstrong2,3, Betsy r Armstrong3, Andrew P Barrett4, Florence M Fetterer4, Alice Frances Hill5, Holly Hughes6, Siri-Jodha S Khalsa1, Adina Racoviteanu4, Bruce H Rau1, Karl Rittger4, Mark W Williams7 and Alan M Wilson7, (1)University of Colorado at Boulder, Boulder, CO, United States; (2)National Snow and Ice Data Center, CIRES University of Colorado, Boulder, CO, United States; (3)Armstrong and Associates, Boulder, CO, United States; (4)National Snow and Ice Data Center, Boulder, CO, United States; (5)Institute of Arctic and Alpine Research, Boulder, CO, United States; (6)Institute of Arctic and Alpine Research, University of Colorado Boulder, Boulder, CO, United States; (7)Univ Colorado, Boulder, CO, United States
- PA43A-2185 Community Data Management and the Exchange for Local Observations and Knowledge of the Arctic Ruth Duerer, Ronin Institute for Independent Scholarship, Westminster, CO, United States, Peter L Pulsifer, University of Colorado, Boulder, CO, United States and Colleen Strawhacker, National Snow and Ice Data Center, Boulder, CO, United States

IN51D Innovative Tools and Services to Enable Data Use across Broad User Communities I

- IN51D-07 Vector-Based Data Services for NASA Earth Science Joshua Rodriguez1, Joe T Roberts2, Kyler Ruvane1,2, Matthew F Cechini3, Charles K Thompson2, Ryan A Bollier4, Kathleen Baynes5 and NASA Global Imagery Browse Services Team, (1)Jet Propulsion Laboratory, Pasadena, CA, United States; (2)NASA Jet Propulsion Laboratory, Pasadena, CA, United States; (3)Science Systems and Applications, Inc., Lanham, MD, United States; (4)NASA Goddard Space Flight Center, Greenbelt, MD, United States; (5)Raytheon Company Riverdale, Riverdale, MD, United States

IN51B Working toward a Living Dashboard of the Planet I Posters

- IN51B-1854 Web Map Apps using NASA’s Earth Observing Fleet Ryan A Bollier1, Kathleen Baynes2, Natalie N Pressley3, Charles K Thompson4, Matthew F Cechini3, Jeffrey E Schmalz1, Christian Alarcon4, Cristina De Cesar4, Taylor Gunnoe3, Min Minnie Wong5, Benjamin A King3, Joe T Roberts4, Joshua Rodrigue4, Alexander P De Luca3 and Jerome King3, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States; (2)Raytheon Company Riverdale, Riverdale, MD, United States; (3)Science Systems and Applications, Inc., Lanham, MD, United States; (4)NASA Jet Propulsion Laboratory, Pasadena, CA, United States; (5)Columbus Technologies and Services Greenbelt, Greenbelt, MD, United States
IN51C Spatial Data Infrastructure for Earth and Space Sciences: Analyzing, Visualizing, and Sharing Multidimensional Earth Science Data I Posters

- IN51C-1865 Earthdata Developer Portal poster Peter Plofchan, Raytheon Company Riverdale, Riverdale, MD, United States
- IN51C-1866 Accessibility and Analysis to NASA’s New Large Volume Missions Jessica Hausman, Michael Gangl, James McAuley, and Robert Toaz Jr, NASA Jet Propulsion Laboratory, Pasadena, CA, United States
- IN51C-1868 SMAP HDF Data at the NASA NSIDC DAAC: Strengthening Support for Visualization and Analysis of Multidimensional Data Amy Y Steiker1, Shannon R Leslie1, Sri-Jodha S Khalsa2 and Amanda Leon1, (1)National Snow and Ice Data Center, Boulder, CO, United States, (2)University of Colorado at Boulder, Boulder, CO, United States

IN52A Exploiting Big Earth Data: GIS and Beyond I

- IN52A-04 Deep Learning-Powered Insight from Dark Resources Manil Maskey1, Rahul Ramachandran2, Ritesh Pradhan1 and J.J. Miller1, (1)University of Alabama in Huntsville, Huntsville, AL, United States, (2)NASA Marshall Space Flight Center, Huntsville, AL, United States
- IN52A-05 ASDC Tools and Technologies for Creating GIS Services for Earth Science Data Discovery and Analysis Aaron Herbert1, Walter E Baskin1, Asher Mazaika2 and John Kusterer3, (1)Science Systems and Applications, Inc., Lanham, MD, United States, (2)Stevens Institute of Technology, Hoboken, NJ, United States, (3)NASA Langley Research Center, Hampton, VA, United States
- IN52A-07 SciSpark: In-Memory Map-Reduce for Earth Science Algorithms Paul Ramirez1, Brian D Wilson2, Kim D Whitehall1, Rahul Sunil Palamuttam3, Chris A Mattern2, Sujen Shah1, Alex Goodman4 and Wayne Burke1, (1)Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)University of California San Diego, La Jolla, CA, United States, (4)NASA Jet Propulsion Laboratory, Pasadena, CA, United States

IN53D Darth Data: Awaken the Forces to Rescue Old Data for New Discoveries! II

- IN53D-01 Rescuing Data from International Scientific Assessments: A Case Study (Invited) Robert R Downs, Robert S Chen and Xiaoshi Xing, Columbia University, CIESIS, Palisades, NY, United States
- IN53D-08 Evaluation of analog film temperature data compared to original digital data David W Gallacher, University of Colorado Boulder, National Snow and Ice Data Center, Boulder, CO, United States and G Garrett Campbell, National Snow and Ice Data Center, Cires University of Colorado, Boulder, CO, United States

IN53E Spatial Data Infrastructure for Earth and Space Sciences: Analyzing, Visualizing, and Sharing Multidimensional Earth Science Data II

- IN53E-01 NASA’s Global Imagery Browse Services: Past, Present and Future (Invited) Kathleen Baynes, NASA GSFC, ESDIS, Greenbelt, MD, United States
- IN53E-03 UI4R: Reusable Spatial Data Services in Unified User Interface at NASA GES DISC Maksym Petrenko1, Mahabaleshwara Hegde1, Keith Bryant1 and Long Pham2, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)NASA - GSFC, Greenbelt, MD, United States
- IN53E-06 How NASA’s Atmospheric Science Data Center (ASDC) is operationally using the Esri ArcGIS Platform to improve data discoverability, accessibility and interoperability to meet the diversifying government, private, public and academic communities’ driven requirements. Matthew Tisdale, NASA Langley Research Center, Hampton, VA, United States
- IN53E-07 Field Campaign Explorer: Simultaneous Data Exploration, Discovery, and Visualization Amanda Marie Weigel1, Aijinika Kulkarni1, Manil Maskey1, Helen Conover2 and Rahul Ramachandran3, (1)University of Alabama in Huntsville, Huntsville, AL, United States, (2)Univ of Alabama Huntsville, Huntsville, AL, United States, (3)NASA Marshall Space Flight Center, Huntsville, AL, United States

IN53A Exploiting Big Earth Data: GIS and Beyond II Posters

- IN53A-1874 Prototyping Dynamic Earth Science Data Visualization on the Web Joe T Roberts1, Amy Y Zhou2, Joshua Rodriguez1, Jeffrey R Hall3, Charles K Thompson1 and NASA Global Imagery Browse Services Team, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)California Institute of Technology, Pasadena, CA, United States, (3)Jet Propulsion Laboratory, Pasadena, CA, United States
- IN53A-1875 Use Cases for Combining Web Services with ArcPython Tools for Enabling Quality Control of Land Remote Sensing Data Products Thomas Mairesberger1, Cole Krebsi1, Lindsey Harrisman3, Rob Quenzer3 and Kevin Impecoven3, (1)USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Sioux Falls, SD, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)NASA - GSFC, Greenbelt, MD, United States
- IN53A-1876 GeoNotebook: Browser based Interactive analysis and visualization workflow for very large climate and geospatial datasets Doru k Octur1, Aashish Chaudhary1, Patr Volva2 and Chris Kottl1a, (1)Kitware Inc., Clifton Park, NY, United States, (2)California State University Monterey Bay, Seaside, CA, United States

IN53C Innovative Tools and Services to Enable Data Use across Broad User Communities II Posters

- IN53C-1889 Data List: A Value-Added Service to Enable Easy Data Selection Angela Li1, Mahabaleshwara Hegde1, Keith Bryant1, Edward Seiler1, Chung-Lin Shie1, William L Teng2, Zhong Liu3, Thomas J Hearty111, Suhung Sheng4 and Steven J Kempler5, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)ADNET Systems Inc. Greenbelt, Greenbelt, MD, United States, (3)George Mason University Fairfax, Center for Spatial Information Science and Systems (CSISS), Fairfax, VA, United States, (4)George Mason University Fairfax, Fairfax, VA, United States, (5)NASA Goddard Space Flight Center, GES DISC, Greenbelt, MD, United States
- IN53C-1891 Data Recipes: Easy-to-Follow Instructions for Using SAR Data Jeanne Claire Laurencelle1, Lisa Drew2, Aidan Myers2 and Chris Kotfila1, (1)National Snow and Ice Data Center, Boulder, CO, United States, (2)University of Alabama Fairbanks, Fairbanks, AK, United States
- IN53C-1902 Virtual Collections: An Earth Science Data Curation Service Kaylin Bugbee1, Rahul Ramachandran2, Manil Maskey1 and Patrick N Gatlin2, (1)University of Alabama in Huntsville, Huntsville, AL, United States, (2)NASA Marshall Space Flight Center, Huntsville, AL, United States
- IN53C-1905 A service for the application of data quality information to NASA earth science satellite records Edward M Armstrong1, Zhangfan Xing1, Chantal Fry1, Sri-Jodha S Khalsa2, Thomas Huang1, Gary Chen3, Toshio Michael Chin4 and Christian Alarcon1, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)University of Colorado at Boulder, Boulder, CO, United States, (3)Raytheon Company Pasadena, Pasadena, CA, United States, (4)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States
- IN53C-1906 The Evolution of an Imagery Data System Christian Alarcon1, Cristina De Cesare1, Thomas Huang1, Joe T Roberts1, Joshua Rodriguez1, Matthew F Cechini2, Ryan A Boller3 and Kathleen Baynes4, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (2)Science Systems and Applications, Inc., Lanham, MD, United States, (3)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (4)Raytheon Company Riverdale, Riverdale, MD, United States
## IN53C-1914 Tools and Services for Working with Multiple Land Remote Sensing Data Products
Cole Krehbiel1, Aaron Friesz1, Lindsey Harriman2, Rob Quenzer2, Kevin Impecoven2 and Thomas Maiersperger3, (1)Innovate!, contractor to USGS Earth Resources Observation and Science (EROS) Center, Sioux Falls, SD, United States, (2)SGT, contractor to USGS Earth Resources Observation and Science (EROS) Center, Sioux Falls, SD, United States, (3)USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Sioux Falls, SD, United States

## IN53C-1915 Advancing User Supports with Structured How-To Knowledge Base for Earth Science Data
Suhung Shen1, James G Acker2, Chris Lynnes2, Luther Lighty2, Tammy Beaty3 and Steve Kempler2, (1)George Mason University Fairfax, Fairfax, VA, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)ORNL, Oak Ridge, TN, United States

## IN53C-1917 NASA EOSDIS Enabling Science by Improving User Knowledge
Francis E Lindsay1, Jennifer Brennan2 and Josh Blumenfeld2, (1)NASA Goddard Space Flight Center, ESDIS, Greenbelt, MD, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States

### IN54A Working Toward a Living Dashboard of the Planet II

#### IN54A-02 Building a Dashboard for Natural Event Monitoring: NASA’s Global Imagery Browse Services + Earth Observatory Natural Event Tracker + Worldview (Invited)
Kevin Ward1,2 and Ryan A Boller1, (1)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (2)Science Systems and Applications, Inc., Lanham, MD, United States

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