



2014 HypIRI Product Symposium

Draft as of May 29

HypIRI: Enabling the Evolution of Land Imaging with New Approaches and Products

How can HypIRI Strategy meet Sustainable Land Imaging Requirements?

A Symposium Sponsored by NASA

Goddard Space Flight Center-Building 34, Rooms W150, W120A/B

June 4-6, 2014

Day One: Wednesday, June 4

8:00-9:00am **Registration/Poster Set-ups/Coffee Service, Foyer**

Evolving the HypsIRI Mission and Products [Chair, Elizabeth Middleton, NASA/GFSC] Room W150

- 9:00-9:15am Welcome and Overview of Symposium (**Elizabeth Middleton, NASA/GSFC**)
- 9:15-9:30am Status of HypsIRI (**Woody Turner, NASA HQ**)
- 9:30-9:45am NASA's Evolving Vision for Space (**Steve Volz, NASA HQ**)
- 9:45-10:00am Summary: Comprehensive Mission Report, 2008-2013 (**Rob Green, JPL**)
- 10:00-10:15am Systems architecture for distributed spacecraft missions (**Jacqueline Le Moigne, NASA/GSFC**)
- 10:15-10:30am White Paper Summary: Science Impact, Deploying VSWIR & TIR Instruments on Separate Platforms (**Simon Hook, JPL**)

10:30-11:00am **Coffee Break/Posters, Foyer**

Session 1:

HypsIRI's compatibility with other US Missions and Sustainable Land Imaging, SLI [Chair, Petya Campbell, UMBC] Room W150

- 11:00-11:15am SLI for NASA (**David Jarrett, NASA HQ**)
- 11:15-11:30am SLI for USGS (**Ray Byrnes, USGS**)
- 11:30-12:00am Architecture Study Scope & Methods / Hyperspectral Imaging & SLI (**Del Jenstrom / Jeff Masek, NASA/GSFC**)
- 12:00-12:15pm CEOS/Essential Climate Variables and SLI (**Miguel Roman, NASA/GSFC**)
- 12:15-12:30pm Landsat 8 (**Jim Irons, NASA/GSFC**)
- 12:30-12:45pm VIIRS and MODIS (**Robert Wolfe, NASA/GSFC**)
- 12:45- 1:00pm ORCA/PACE and HICO (**Carlos Del Castillo, NASA/GSFC**)

1:00-2:00pm **Lunch, Foyer**

Discussion TOPIC: HypsIRI strategy to meet SLI multispectral needs (**Steve Ungar**)

Session 2:

Ecosystem Studies [Chair, Sustin Ustin, UC Davis] Room W150

- 2:00-2:15pm Retrieving LUE with Hyperion Globally (**Fred Huemrich, NASA/GSFC**)
- 2:15-2:30pm Retrieving the new fAPARchl Product from Space (**Qingyuan Zhang, NASA/GSFC**)
- 2:30-2:45pm Retrieving GPP in Forests and Agriculture (**Ben Cheng, NASA/GSFC**)
- 2:45-3:00pm Vegetation feature analysis and spectral comparison using the USGS PRISM software (**Ray Kokaly, USGS**)
- 3:00-3:15pm EcoSIS: The Ecosystem Spectral Information System (**Philip Townsend, UW**)
- 3:15-3:30pm Mapping Fire Scars Using Hyperspectral Imagery and Kernel Based Image Analysis (**Saurabh Prasad, UH**)
- 3:30-3:35pm Coastal remote sensing using HICO: results, challenges and potential applications for HypsIRI (**Wesley Moses, NRL**)

3:35-4:15pm **Coffee Break/Posters, Foyer**

Session 3A:

Aquatic Ecology [Jeff Luvall, MSFC] Room W150

- 4:15-4:30pm HypsIRI Aquatic Studies Group (HASG) activities (**Wesley Moses, NRL**)
- 4:30-4:45pm Decomposition of Hyperspectral data for use in Case 2 environments (**Joseph D. Ortiz, Kent State University**)
- 4:45-5:00pm Role of Space Borne Imaging Spectrometry in Global Water Quality Monitoring (**Arnold Dekker, CSIRO**)

Session 3B:

Public Health and Disasters [Jeff Luvall, MSFC] Room W150

- 5:00-5:15pm Health and Air (**John Haynes, NASA/HQ**)
- 5:15-5:30pm CEOS Disaster Risk Management for Societal Benefit (**Stu Frye, NASA/GSFC**)
- 5:30-5:45pm Volcanoes (**Rick Wessels, USGS**)
- 5:45-6:00pm Sustainable land imaging requirements to monitor of surface soil moisture with HypsIRI-like data (**Mike Ramsey, University of Pittsburgh**)

6:00pm **ADJOURN, Day 1**

6:30-9:00pm **Dinner/Evening Event in Honor of Susan Ustin, UC Davis** (Sir Walter Raleigh Restaurant, Greenbelt, MD)

6:30 pm **Shuttle pick-up from GSFC Visitor Center parking lot to Sir Walter Raleigh for Group Dinner. Return pick-up, 9:00pm to Holiday Inn**

Day Two: Thursday, June 5

8:00am **Registration/Poster Set-ups/Coffee Service, Foyer**

Session 4A:

New HypsIRI Like Data Sets & Calibration Topics [Chair, Rob Green, JPL] Room W150

- 8:45-9:00am HypsIRI Airborne Campaign Overview (TBD)
- 9:00-9:15am Level 2 processing of AVIRIS HypsIRI preparatory campaign measurements (**Rob Green, JPL**)
- 9:15-9:30am HypsIRI Flight Campaigns for Summer Sea-Land Thermal Gradients & Sea-Breezes in LA (**Jorge Gonzalez, NOAA**)
- 9:30-9:45am Atmospheric corrections (**Bo-Cai Gao, Naval Research Lab**)
- 9:45-10:00am **Poster Speed Talks (5 @ 3 min. each)**

10:00-10:30am **Coffee Break with Demo Presentations, Foyer**
GEO-social/API Demo (Pat Cappelaere, Vightel) AND Fast AC Demo (Vuong Ly, NASA/ GSFC) Room W120A

Session 4B:

New HypsIRI Like Data Sets & Calibration Topics [Steve Ungar, NASA/GSFC] [Room W150]

- 10:30-10:45am Calibration and Validation of AVIRIS-C and AVIRIS-NG in Relation to HypsIRI (**Robert Green and the AVIRIS Team**)
- 10:45-11:00am Landsat-7&8/Hyperion/G-LiHT/CLARREO (**Joel McCorkel, NASA/GSFC**)
- 11:00-11:15am Hyperion stability and sub-pixel heterogeneity in a pseudo-invariant desert site (**Chris Neigh, NASA/GSFC**)
- 11:15-11:30pm EO-1 Calibrations (**Lawrence Ong, NASA/GSFC**)
- 11:30-11:45am Geo-correction or Geo-corruption (**Steve Ungar, NASA/GSFC**)
- 11:45-12:00pm Discussion: Can spectrometers provide Landsat Data Continuity from past to future Missions? (**Chair, Steve Ungar, NASA/GSFC**)

12:00-1:00pm **Lunch, Foyer**

Session 5:

Intelligent Payload Module [Chair, Dan Mandl, NASA/GSFC] Room W150

- 1:00-1:15pm Intelligent Payload Module (PM) Concept Evolution (**Dan Mandl, NASA/GSFC**)
- 1:15-1:30pm Prototype and Metrics for Data Processing Chain Components of IPM (**Vuong Ly, NASA/GSFC**)
- 1:30-1:45pm Generation of OLI data products Onboard Earth Observing One: a preliminary report (**Steve Chien, JPL**)
- 1:45-2:00pm CubeSat Technology Flight Validation and the IPEX Mission (**Charles Norton, JPL**)
- 2:00-2:15pm Flight validation of HypsIRI IPM Concepts on the Intelligent Payload Experiment (IPEX) CubeSat (**Steve Chien, JPL**)
- 2:15-2:30pm Csp and Xilinx Zynq Processors for Onboard Processing (**Gary Crum, NASA/GSFC**)

2:30-3:00pm **Coffee Break/Posters, Foyer**

Session 6:

Ground Data Processing and Distribution [Chair, Pat Cappelaere, Vightel] Room W150

- 3:00-3:15pm Data Products on Cloud - Update (**Vuong Ly, NASA/GSFC**)
- 3:15-3:30pm A Cloud-based Scanning Framework for Analyzing Large Volumes of Hyperspectral Data (**Maria T. Patterson, UChicago**)
- 3:30-3:45pm NASA Earth Science Products for Farmer Management and Cell Phone Systems (**Molly Brown, NASA/GSFC**)
- 3:45-4:00pm Data Fusion and Compression (**Wojciech Czaja, UMD**)
- 4:00-4:15pm OpenGeoSocial API: Product Discovery/Distribution via Social Networks (**Pat Cappelaere, Vightel**)
- 4:15-4:30pm Distributed Disaster Architecture (**John Evans, GST**)

Preparing for Next Decadal Survey [Chair, Woody Turner, HQ] Room W150

- 4:30-4:45pm The **New** NRC 2017 Decadal Survey (**Woody Turner, HQ**)
- 4:45-5:00pm Discussion: *How HypsIRI can contribute?*

5:00-5:30pm **Group Discussion, Synopsis and Concluding Remarks [Elizabeth Middleton, NASA/GSFC] Room W150**

5:30pm **ADJOURN, HypsIRI Symposium**

6:00pm **Shuttle pick-up from GSFC Visitor Center parking lot back to Holiday Inn**

Day Three: Friday, June 6

- 09:00-10:20am** ***New Studies and Products for Coastal & Aquatic Science with HypIRI [Chair, Kevin Turpie, UMBC] Room W150***
- 09:00am Overview Progress Report (**Kevin Turpie, UMBC**)
- 09:20am Phytoplankton Functional Types and Water Quality at the Land-Sea Interface: Challenges, Progress, and Opportunities with the HypIRI Airborne Campaign (**Liane Guild and Sherry Palacios, AMES**)
- 09:40am Airborne hyperspectral instrument PRISM and observations of submerged aquatic vegetation (**Heidi Dierssen, UCONN**)
- 10:00am Atmospheric Correction over Water (**Bo-Cai Gao, NRL**)
- 10:20-10:40am** ***Coffee Break, Foyer***
- 10:40-11:15am** ***Forum Discussion (exit criteria - form clear recommendations for each topic and summarize)***
- Atmospheric Correction Improvements
 - Glint Correction
 - Calibration, Characterization, and Validation

 - VSWIR/TIR Instrument Separation
 - Alternative Orbits and Platforms
 - Coastal Mask Development
- 11:15-11:45am** ***Further Aquatic Algorithm Development: Efforts and Directions***
- Can the HASG expand to support other coastal and inland water RS efforts?
 - What resources can be exploited for community algorithm development?
 - Will there be funding to support algorithm development?
 - How does the community support operational production of Level 3-4 data?
- 11:45-12:00pm** ***Summarization of Key Actions and Recommendations***
- 12:00pm** ***ADJOURN***

Spectroscopic (PRISM) Tutorial, Room W305

- 9:00-4:00pm**
(By Invitation) ***Processing Routines in IDL for Spectroscopic Measurements (PRISM) Tutorial***
[Instructor: Ray F. Kokaly, USGS] Room W305
- 10:00-10:15am** ***Coffee Break, Foyer***
- 12:00-1:00pm** ***Lunch, Foyer***
- 3:00-3:15pm** ***Coffee Break, Foyer***
- 4:00pm** ***ADJOURN***
- 4:30pm** ***Shuttle Pick-up from Visitor Center, Going to Holiday Inn***