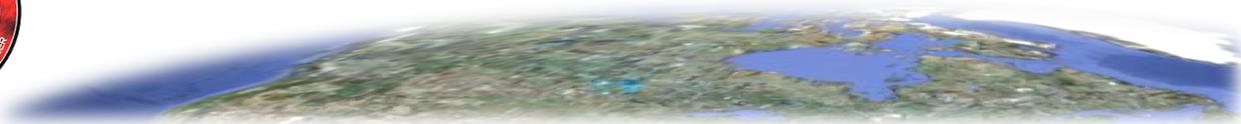




2013 HypIRI Products Symposium



HypIRI Products for Societal Benefit Areas (SBAs) and Aquatic Studies

May 29 – 30 (Wed-Thu), 2013

NASA/Goddard Space Flight Center
Building 34, Conference Room W150
Breakout Rooms W120A, W120B and B305

Day 1, Wednesday, May 29, 2013

8:00 Registration/ Posters Up in Room W120B/ Coffee

8:30 Symposium Opening, Goals and Agenda, W150 [*Chair Elizabeth Middleton NASA/GSFC*]

8:40 Current status of HypsIRI mission [*Woody Turner, NASA/HQ Co-Program Scientist*]

8:55 The NASA Applied Sciences Program and the US Group on Earth Observations SBAs: Earth Sciences Serving Society [*Lawrence Friedl, NASA/HQ Associate Director for Applied Sciences*]

9:10 Aircraft campaign – status update, sites, and flight plans [*Woody Turner*]

9:25 Instruments concept (IC-1): introducing VSWIR & TIR instruments on separate platforms [*Rob Green & Simon Hook, NASA/JPL*]

9:35 - 10:00 Coffee Break

10:00 Ecological Forecasting for Terrestrial and Aquatic Ecosystems, W150 [*Chair Susan Ustin, UC Davis*]

10:00 Improving ecological forecasting with hyperspectral data: A data assimilation system for the Community Land Model [*Andrew Fox, NEON*]

10:20 Evapotranspiration estimation with simulated HypsIRI data over arid lands [*Andrew French, USDA*]

10:40 HypsIRI data products for plant functional types [*Susan Ustin, UCD*]

11:00 Determining leaf dry matter content using the normalized dry matter index and its possible application for estimating fuel moisture content [*Raymond Hunt, USDA*]

11:20 Data fusion techniques for mapping daily water use at field scales [*Martha Anderson, USDA*]

11:40 The Matsu System for Rapid Analysis of Large Volumes of Data [*Bob Grossman, UChicago*]

12:00 – 13:00 Lunch

12:20 - 1:00 Aquatic Data Products Breakout, W150

12:20 Angular dependence on sand density of the spectral BRDF [*Bill Philpot, Cornell*]

12:40 Photosynthetic condition of giant Kelp (*Macrocystis pyrifera*) in the Santa Barbara Channel [*Thomas Bell, UC St. Barbara*]

13:00 Coastal & Inland Aquatic Data Products Topical Areas, W150 [*Chair Kevin Turpie, UMBC*]

13:00 Coral reef products for HypsIRI [*Eric Hochberg, BIOS*]

13:20 Use of HypsIRI Observations to get Phytoplankton Functional Groups [*John Moisan, NASA/WFF*]

13:40 Improved Absorption and Taxonomic Composition Estimates with HypsIRI [*Tiffany Moisan, NASA/WFF*]

14:00 Impacts of Spatial and Spectral Resolution on Hyperspectral Remote Sensing of Aquatic Vegetation [*Richard Zimmerman, Old Dominion University*]

14:20 Using hyperspectral airborne PRISM imagery to map vulnerable coastal salt marsh and sea grass habitats [*Heidi Dierssen, University of Connecticut*]

14:40 Hyperspectral Imager for Coastal Ocean (HICO) [*Bo-Cai Gao, Naval Research Lab*]

15:00 – 15:20 Coffee Break

15:20 Special Topics 1, W150 [*Chair Stephen Ungar NASA/GSFC*]

15:20 HypsIRI Aircraft campaign: science goals, project overviews & data sharing [*Rob Green & Simon Hook*]

15:35 Initial science results of the NASA/MAGI airborne instrument at the Salton Sea, CA: implications for environmental studies using HypsIRI data [*David Tratt, Aerospace Corp.*]

15:50 Parallel Discussion Sessions: Charge, Goals and Anticipated Outcome [*Elizabeth Middleton*]

W150 Coastal/inland aquatic products: issues, products & requirements [*Kevin Turpie*] ***

W120A Ecological forecasting: products, requirements & issues [*Susan Ustin*]

W305 Instruments concept (IC-2): discussing benefits and concerns from having VSWIR & TIR on separate platforms [*Simon Hook & Rob Green*]

17:30 Adjourn

6:30pm Happy Hour & Dinner [*Ruby Tuesday*]

*** *Aquatic breakout talks & discussion topics are listed on a separate page*

Day 2, Thursday, May 30, 2012

8:00 Registration/ Posters in Room W120B/ Coffee

8:30 Environmental & Human Impacts including Disasters, Natural Hazards, Water Management and Public Health, W150 [*Chair Jeff Luvall, NASA/MSFC*]

8:30 Traceability matrix, HypsIRI products in support of SBA requirements [*Jeff Luvall, NASA/MSFC*]

8:50 Ecologic niche models for neglected tropical diseases (NTD) in data-scarce landscapes based on environmental suitability and poverty-related risk factors at the census tract level used for operational community-based intervention programs [*John B. Malone, Louisiana State University*]

9:10 Volcanic CO₂ measurements from hyperspectral data [*Fabrizia Buongiorno, INGV*]

9:30 The feasibility of systematic inland water quality monitoring with HypsIRI [*Arnold Dekker, CSIRO*]

9:50 Discussion [*Chair Jeff Luvall*]

10:10-10:30 Coffee Break

10:30 Automated, Rapid Processing for Low Latency Data Products, W150 [*Chair Dan Mandl, NASA/GSFC*]

10:30 IPM Update and Preliminary Low Latency User Requirements [*Dan Mandl, NASA/GSFC*]

10:45 An open GeoSocial API to meet societal needs [*Pat Cappelaere, Vightel Co.*]

11:00 Rapid Co-Registration with Landsat GLS [*Maria Szama, NASA/GSFC*]

11:15 Geo-correction for Airborne Platforms [*Vuong Ly, NASA/GSFC*]

11:30 EDOS high-rate data capture and delivery of low-latency HypsIRI level-zero data [*Bruce Mclemore, Honeywell*]

11:45 Discussion [*Chair Dan Mandl*]

12:00 – 13:00 Lunch

DEMO: ENVI Services Engine for Web-Accessible HSI Applications, W120A [*Thomas Harris*]

13:00 Special Topics, W150 [*Chair Stephen Ungar*]

13:00 Current and future hyperspectral instruments [*Michael Abrams, NASA/JPL*]

13:20 HypsIRI Spectral Library: concept, status and requirements [*Simon Hook*]

13:40 Role of imaging spectrometer data for model-based cross-calibration of imaging sensors [*Kurt Thome, NASA/GSFC*]

14:00 Spectral time series for the study of ecosystem function, using EO-1 Hyperion [*Petya Campbell, UMBC*]

14:20 Linking terrestrial biosphere models with imaging spectrometry measurements of ecosystem composition, structure and function [*Paul Moorcroft, Harvard*]

14:40 Discussion Synopsis: Ecological Forecasting for Terrestrial and Aquatic Ecosystems [*Susan Ustin*]

14:50-15:15 Coffee Break

15:15 Interactive Poster Presentations, W150 [*1 slide/poster, 2 min/each*]

16:00 HypsIRI products in support of Societal Benefit Areas: Synopsis from Discussion Sessions and Open Discussions, W150 [*Chairs Woody Turner & Elizabeth Middleton*]

16:00 Coastal and Inland Aquatic Data Products Break-Out [*Kevin Turpie*]

16:10 Environmental & Human Impacts [*Jeff Luvall*]

16:20 Rapid Processing for Low Latency [*Dan Mandl*]

16:30 Instruments concept: impacts on higher level products from placing VSWIR & TIR instruments on separate platforms [*Rob Green & Simon Hook*]

16:40 Open Discussions

17:00 (W150) Summary and review of report outline [*Elizabeth Middleton & Petya Campbell*]

17:30 Adjourn

***** *Aquatic breakout talks and discussion topics***

16:00 Parallel Discussion Session: Coastal/Inland Aquatic Products: issues, products & requirements, W150
[Turpie, duration ≤ 2 hrs]

16:00 Aquatic studies with HypsIRI preparatory airborne campaign [Sherry Palacios, UC Santa Cruz]

16:20 HypsIRI aquatic data products report [Kevin Turpie, UMBC]

- *HypsIRI's potential contributions to wetland studies.* [Kevin Turpie, UMBC]
- *Potential applications of HypsIRI for land/water/ice Geomorphology.* [Young-Heon Jo University of Delaware]
- *Detecting and quantifying water surface features using hyperspectral remote sensing: Strengths and limitations of HypsIRI.* [Chuanmin Hu, University of South Florida]
- *Water-column retrievals.* [Emmanuel Devred, Université Laval]
- *Bathymetry from hyperspectral remote sensing.* [ZhongPing Lee, University of Massachusetts Boston]
- *Benthic data products.* [Eric Hochberg, BIOS]

17:00 Aquatic data products discussion [Chair: Kevin Turpie, UMBC]

1. *Discussion on candidate suite of data products.*
2. *Availability of data for product development (HICO, air campaign data, ISS HICO follow-on / HypsIRI concept instrument).*
3. *Seed questions regarding data product generation:*
4. *Potential issues regarding data product generation:*
 - *Atmospheric correction techniques: are further developments required for HypsIRI aquatic data products? (e.g., NO₂)*
 - *Spatial resolution changes from 60m to 1km for depth > 50m. Resolution can be commanded for an in situ study. Is this sufficient for observations such as water surface features or ice-edge phenomena?*
 - *Separation of the VSWIR and Thermal instruments*