



**\*\*\* RaDyO Planning Meeting: 3-5 April 2006 \*\*\***  
**Scripps Institution of Oceanography**  
**La Jolla, CA**  
**T29 “Cottage Above the Cliffs”**

Dear RaDyO Participant;

Thank you for agreeing to meet at Scripps Institution of Oceanography, 3-5 April 2006. The main focus of this planning meeting is design coherent, comprehensive RaDyO field experiment(s) with respect to instrumentation, deployment platform(s), time of sampling, region of sampling, etc. The outcome of this meeting will enable Steve to request shiptime and us to put our RaDyO budgets together for Years 2-5 (due to Steve before the end of April).

We have asked the RaDyO modelers to parameterize their models so that we can begin to gain insight as to the types of measurements and at what scales are necessary to drive and test these models. We will start the meeting with modeler presentations and time for questions and discussion between field experimenters and modelers.

In return, we would like the rest of the RaDyO PIs (see Agenda below) to put together short presentations (15 minutes) describing your desired field experiment plan including pier testing in 2007 (if necessary) and field years 2008 and 2009. Please include in your presentation the type of measurement(s) you plan to make and what specifications you require in order to make them. For example: What is the size and weight of your instrumentation? Do you require a boom/tether/mooring/AUV for deployment? What is the desired height above the water for your measurements? What is the minimum speed required of the vessel carrying your instrumentation? At what scales can you/would you like to make your measurements? What are the ideal conditions for your measurements (calm seas with no wind or rough seas with gale-force winds or each of the above)? Do you have any undesirable “contamination factors”, e.g., slicks, wakes, shadowing, etc.? What supporting measurements do you require from other RaDyO PIs? Can you offer platform payload space to other RaDyO PIs?

After PI presentations, we will first breakout into groups by discipline: waves, bubbles, and optics with modelers integrated within each group. The purpose of this breakout session is to integrate measurements within each discipline to determine gaps in parameters and scales and the ideal conditions in which to sample. Each group will be tasked with formulating an ideal experimental plan. We realize there are several overlapping interests; therefore sending spies to the other groups is highly encouraged.

We will begin the second day with summaries of each breakout group followed by an open discussion regarding the field experiment plan. The first Open Discussion topic will include: vessel (plan on use of the R/V Kilo Moana), location, and timing of field experiments including pier testing; desired

environmental conditions of sampling; modifications to the vessel; physical integration of groups' assets in space and time.

We will then have a second breakout session (waves, bubbles, optics, modelers interspersed within each group) to discuss data expectations, e.g., scales of measurements covered and gaps in scales; data assimilation into models and model feedbacks; data dissemination, presentation, sharing, etc. After group summary presentations, we will hold an open discussion and conclude with a consensus RaDyO field experiment plan.

If you have any questions regarding the meeting agenda and discussion topics, please contact us at [tommy.dickey@opl.ucsb.edu](mailto:tommy.dickey@opl.ucsb.edu), [grace.chang@opl.ucsb.edu](mailto:grace.chang@opl.ucsb.edu), and cc to [ackless@onr.navy.mil](mailto:ackless@onr.navy.mil). For meeting logistical issues, contact Heather Fryling at [heather@mpl.ucsd.edu](mailto:heather@mpl.ucsd.edu). Also see the RaDyO website for more information: <http://www.opl.ucsb.edu/radyo/>.

Thank you,  
Sincerely,

Tommy Dickey and Grace Chang

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**DRAFT Agenda**

**Monday, 3 April**

09:00 Introduction and Overview of Last Planning Meeting: Tommy Dickey, UCSB

Modeler Presentations: Parameterization and shopping lists for field experiments.

09:30 Dick Yue, MIT; Lian Shen, JHU, et al.: A direct simulation-based study of radiance in a dynamic ocean.

09:45 Questions and discussion.

10:00 George Kattawar, TAMU: 3D-time dependent vector radiative transfer in an atmosphere-ocean system.

10:15 Questions and discussion.

10:30 Coffee Break

Field Experiment Presentations: Requirements/Specifications.

10:45 Michael Banner, U. NSW; Tanos Elfouhaily, U. Miami; Johannes Gemmrich, U Vic; Russel Morison, U. NSW, Howard Schultz, U. Mass; Christopher Zappa, LDEO: Ocean surface wave optical roughness – innovative measurement and modeling.

11:00 Ken Melville and Luc Lenain, Scripps: The influence of breaking at the ocean surface on oceanic radiance and imaging.

11:15 Dave Farmer and Svein Vagle, URI: Wave Induced Bubble Clouds and their Effect on Radiance in the Upper Ocean.

11:30 Dariusz Stramski, Scripps: Measurements of wave-induced fluctuations in the underwater radiance under various surface boundary conditions

11:45 Marlon Lewis and Scott McLean, Satlantic: Quantitative estimation of variability in the underwater radiance distribution (RADCAM).

12:00 Lunch (will be provided).

13:15 Ken Voss, U. Miami: Downwelling polarized radiance distribution measurements.

13:30 Mike Twardowski and Ron Zaneveld, WET Labs: High fidelity IOP observations.

- 13:45 Scott Pegau and Hemantha Wijesekera, OSU: Spatial variability of irradiance in the wave boundary layer.
- 14:00 Tommy Dickey and Grace Chang, UCSB: High Resolution Time Series Observations and Modeling of Radiance, Optical Properties, and Physical Processes.
- 14:15 Breakout Group Discussion Topic #1 Instructions: Tommy Dickey
- 14:30 Breakout Groups, Topic #1 - Formulate an ideal field experiment for your discipline. Assume use of the R/V Kilo Moana.
- 15:00 Coffee Break
- 17:00 Recess for the day. Reception to follow.

### **Tuesday, 4 April**

- 09:00 Group Topic #1 Summary Presentations and Discussion
- 10:30 Coffee Break
- 10:45 Breakout Group Discussion Topic #2 Instructions: Tommy Dickey
- 11:00 Breakout Groups, Topic #2 - Data discussions: scales covered by measurements and gaps in scales, assimilation into models, feedback from models, dissemination, presentation, etc.
- 12:00 Lunch until 13:15 (will be provided)
- 14:00 Group Topic #2 Summary Presentations and Discussion
- 15:00 Coffee Break
- 15:15 Open discussion to concisely describe the field experiment design, timing, and location and how measurements will be integrated into models and how models will provide feedback to field experiments. Identify gaps in field experiments and how to address them: Surfactants? Remote sensing? Etc.
- 16:45 Concluding Discussion: Tommy Dickey and Steve Ackleson
- Funding issues (FY07-FY10)
  - Action items and responsibilities
  - Schedule next meeting date and location or pier test date and location
- 17:00 Conclusions and adjournment.

### **Wednesday, 5 April** for wrap up, if needed