NASIRF: The NASA Air-Sea Interaction Research Facility

Joint Heat Flux Experiments with Western Connecticut State University: Jan.2006

Prof. James Boyle

Inside NASA Wind Wave Tank

WCSU Multi-Sensor Float Under Development (~ 20 cm diameter)

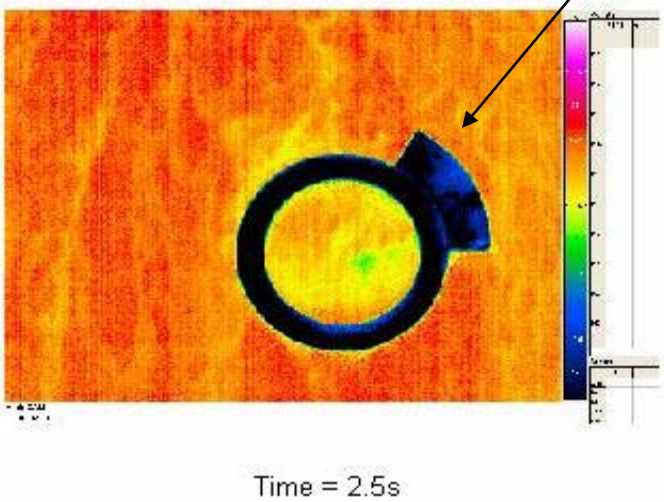
The Goal:

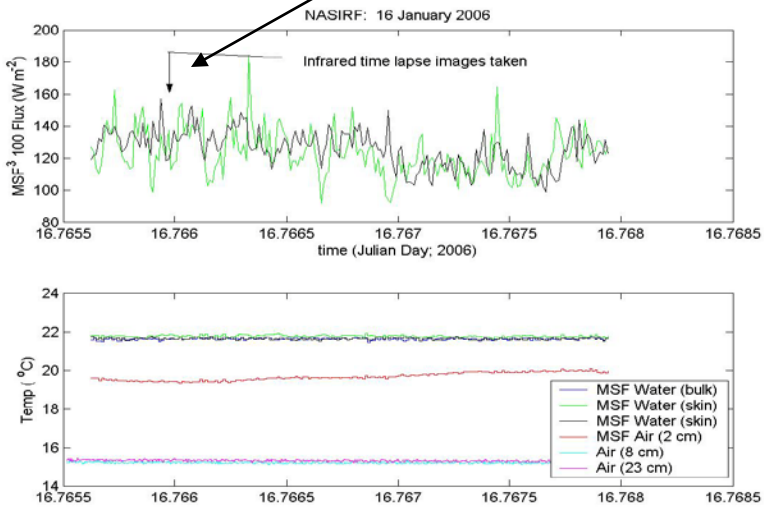
Accurate Measurements of:

- ***net surface heat flux***
- ***net solar irradiance***
- ***near-surface temperature***
- ***sea state parameters***

IR Image Looking Down Into Wave Tank at the New Multi-Sensor Float (MSF)

Flux Measurements During IR Image





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Visit the Facility at http://nasirf.wff.nasa.gov

Air-Sea Ocean Sciences Branch OSB Interaction Research Facility

Research and Development:
A Surface Contact, Lightweight, Wave-Following, Multi-Sensor Float

NASIRF, the NASA Air-Sea Interaction Research Facility at Wallops Flight Facility has hosted another joint experiment with the Western Connecticut State University and Prof. James Boyle. The instrument uses a porous fiberglass fabric stretched inside a foam ring to support the sensors at the air-water interface.

The Goal is to measure ocean surface skin temperature gradients, which are ultimately used to determine net surface heat flux, net solar irradiance, and near-surface temperature. The device is wave-following, allowing measurement of other sea state parameters. Accurate *in situ* measurements of local skin temperatures would support verification of the accuracy of atmospheric corrections for satellite radiometric measurements. Many numerical models need to specify surface fluxes and temperatures as boundary conditions. This new sensor concept is proving capable for this task.

Hundreds of these multi-sensor floats could be deployed from ships or aircraft to provide ground truth for satellite-based measurements and support for air-sea flux field experiments.

Among the advantages of this instrument is its extreme low cost and simple operation.

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