

Heat and momentum fluxes from WHOI surface moorings deployed in the Arabian Sea in 1995 (U.S. JGOFS Arabian Sea project)

Website: <https://www.bco-dmo.org/dataset/2594>

Data Type: Other Field Results

Version: November 7, 1997

Version Date: 1997-11-07

Project

» [U.S. JGOFS Arabian Sea](#) (Arabian Sea)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

Contributors	Affiliation	Role
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Dataset Description

Heat and momentum fluxes from surface mooring at 15.5N, 61.5E from October 1994 until October 1995

Methods & Sampling

See Platform deployments for cruise specific documentation

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Data Files

File
mooring_flux.csv (Comma Separated Values (.csv), 10.09 MB) MD5:c52404d242ae779e50b4355e35204f52
Primary data file for dataset ID 2594

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Parameters

Parameter	Description	Units
year	year of observation, either 1994 or 1995	
yrday	Day of year for 1994, Jan 1 00:00:00 is day 1 observations begin October 16, 1994 (day 289) Note that this number continues to increment by one until end of observations and does not initialize to 1 on January 1, 1995.	
heat_latent	Latent heat flux	Watts/meter ²
heat_sensible	Sensible heat flux	Watts/meter ²
rad_net_sw	Net shortwave radiation	Watts/meter ²
rad_net_lw	Net longwave radiation	Watts/meter ²
heat_net	Net heat flux	Watts/meter ²
wind_stress_E	East wind stress	Newtons/meter ²
wind_stress_N	North wind stress	Newtons/meter ²
wind_stress	Wind stress magnitude	Newtons/meter ²
evap	Evaporation rate	meters/second
evap_precip	Evaporation - precipitation rate	meters/second

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Instruments

Dataset-specific Instrument Name	Eppley Longwave Radiometer
Generic Instrument Name	Eppley Longwave Radiometer
Generic Instrument Description	The Eppley Precision Infrared Radiometer (PIR) pyrgeometer measures longwave (infrared) radiation. It is housed in a weatherproof titanium canister that has been painted with a very flat black paint that absorbs radiation. A small glass dome at the top of the instrument is covered with an 'interference coating' which allows only infrared radiation to come through. Light levels are detected as temperature changes creating voltages in fine wire coil detectors. more from Eppley Labs

Dataset-specific Instrument Name	Improved Meteorological Recorder
Generic Instrument Name	Improved Meteorological Recorder
Generic Instrument Description	An IMET Recorder is an instrument package that can be mounted on a ship or buoy to record mean weather data including air and sea-surface temperature, incoming short and long-wave radiation, precipitation, humidity, wind velocity and barometric pressure. Each sensor in the system communicates digitally and returns calibrated values to a central data recorder.

Dataset-specific Instrument Name	Vector-Averaging Wind Recorder
Generic Instrument Name	Vector-Averaging Wind Recorder
Generic Instrument Description	The Vector-Averaging Wind Recorder (VAWR) is a system designed by researchers at Woods Hole Oceanographic Institution (WHOI) to make surface meteorological measurements. The standard WHOI Vector Averaging Wind Recorder (VAWR) of the late 1980s through early 1990s was mounted on a toroid buoy (Dean and Beardsley, 1988). In addition to wind speed and direction, the VAWR could also be configured to record water temperature and conductivity data from sensors mounted at 1 meter depth on the mooring bridle of the buoy (Trask et al., 1995). References: Dean, JP and RC Beardsley. 1988. A vector-averaging wind recorder (VWAR) system for surface meteorological measurements in CODE (Coastal Ocean Dynamics Experiment). Published by Woods Hole Oceanographic Institution in Woods Hole Mass. Series: CODE technical report no. 44., WHOI-88-20, WHOI Technical report (Woods Hole Oceanographic Institution). 74 pp. Trask, Richard P.; Way, Bryan S.; Ostrom, William M.; Allsup, Geoffrey P.; Weller, Robert A. 1995. Arabian Sea mixed layer dynamics experiment : mooring deployment cruise report R/V Thomas Thompson cruise number 40, 11 October-25 October 1994. (WHOI DLA URI: http://hdl.handle.net/1912/482)

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Deployments

JGOFS_WH_buoy_dep2

Website	https://www.bco-dmo.org/deployment/57746
Platform	WHOI surface mooring
Start Date	1995-04-15
End Date	1995-10-19

Description	<p>Woods Hole Surface Mooring Deployment 2 A surface mooring was deployed off the coast of Oman along the climatological axis of the Findlater Jet from October 1994 to October 1995. The location chosen for the surface mooring, 15.5°N, 61.5°E, was close to the climatological maximum in the wind speed during the height of the Southwest Monsoon. Two separate mooring deployments, the first beginning October 15, 1994, and ending April 20, 1995, and the second starting April 22, 1995, and ending October 10, 1995, were used so that a second set of freshly calibrated sensors was deployed prior to the onset of the Southwest Monsoon. Reference: Weller, R.A., M.F. Baumgartner, S.A. Josey, A.S. Fischer and J.C. Kindle (1998). Atmospheric forcing in the Arabian Sea during 1994-1995: observations and comparisons with climatology and models. Deep-Sea Research II, 45(10-11): 1961-1999, U.S. JGOFS Contribution No. 419.</p> <p>Methods & Sampling PI: Robert Weller of: Woods Hole Oceanographic Institution description: Heat and momentum flux dates: October 1994 to October 1995 location: N: 15.5 S: 15.5 W: 61.5 E: 61.5 project: Arabian Sea Mixed Layer Dynamics Experiment ship: R/V Thomas G. Thompson These data are from the Woods Hole Oceanographic Institution surface mooring deployed at 15.5N, 61.5E from October, 1994 to October 1995. Record range: 1994-10-16 00:11:15 through 1995-10-19 23:56:15 Sample rate: 7.5 minutes These data were collected with support from the Office of Naval Research, grant N00014-94-1-0161. If you use any of these data in a publication, please acknowledge Dr. Robert Weller and the Woods Hole Oceanographic Institution when using the data. This dataset contains heat and momentum fluxes computed on Jun 24, 1996 by Mark Baumgartner using modified TOGA COARE bulk flux algorithm version 2.5. Warm layer and cool skin adjustments are included. Fluxes due to rain (heat or momentum) are NOT included in the net heat flux and wind stresses. Please contact Dr. Robert Weller or Mr. Mark Baumgartner if you have any questions regarding this dataset. ***** Dr. Robert Weller * * Woods Hole Oceanographic Institution * * Woods Hole, MA 02543 * * (508) 289 - 2508 * * rweller@whoi.edu * * * * Mr. Mark Baumgartner * * Woods Hole Oceanographic Institution * * Woods Hole, MA 02543 * * (508) 289 - 2677 * * mbaumgartner@whoi.edu * * * * *****</p>
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JGOFS_WH_buoy_dep1

Website	https://www.bco-dmo.org/deployment/57745
Platform	WHOI surface mooring
Start Date	1994-10-16
End Date	1995-10-19
Description	<p>Woods Hole Surface Mooring Deployment 1 A surface mooring was deployed off the coast of Oman along the climatological axis of the Findlater Jet from October 1994 to October 1995. The location chosen for the surface mooring, 15.5°N, 61.5°E, was close to the climatological maximum in the wind speed during the height of the Southwest Monsoon. Two separate mooring deployments, the first beginning October 15, 1994, and ending April 20, 1995, and the second starting April 22, 1995, and ending October 10, 1995, were used so that a second set of freshly calibrated sensors was deployed prior to the onset of the Southwest Monsoon. Reference: Weller, R.A., M.F. Baumgartner, S.A. Josey, A.S. Fischer and J.C. Kindle (1998). Atmospheric forcing in the Arabian Sea during 1994-1995: observations and comparisons with climatology and models. Deep-Sea Research II, 45(10-11): 1961-1999, U.S. JGOFS Contribution No. 419.</p>

TT040

Website	https://www.bco-dmo.org/deployment/57701
Platform	R/V Thomas G. Thompson
Start Date	1994-10-11
End Date	1994-10-25
Description	Mooring Deployment Cruise

TT046

Website	https://www.bco-dmo.org/deployment/57707
Platform	R/V Thomas G. Thompson
Start Date	1995-04-14
End Date	1995-04-29
Description	Mooring Recovery and Redeployment Cruise

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Project Information

U.S. JGOFS Arabian Sea (Arabian Sea)

Website: <http://usjgofs.whoi.edu/research/arabian.html>

Coverage: Arabian Sea

The U.S. Arabian Sea Expedition which began in September 1994 and ended in January 1996, had three major components: a U.S. JGOFS Process Study, supported by the National Science Foundation (NSF); Forced Upper Ocean Dynamics, an Office of Naval Research (ONR) initiative; and shipboard and aircraft measurements supported by the National Aeronautics and Space Administration (NASA). The Expedition consisted of 17 cruises aboard the R/V Thomas Thompson, year-long moored deployments of five instrumented surface buoys and five sediment-trap arrays, aircraft overflights and satellite observations. Of the seventeen ship cruises, six were allocated to repeat process survey cruises, four to SeaSoar mapping cruises, six to mooring and benthic work, and a single calibration cruise which was essentially conducted in transit to the Arabian Sea.

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Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: <http://usjgofs.whoi.edu/>

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and

associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

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