

**U.S. CLIVAR Western Boundary Current Workshop
15 - 17 January 2009
Phoenix, Arizona**

Wyndham Phoenix
50 East Adams Street

January 15 (Thursday) Session 1: Findings from the KESS and CLIMODE programs; Co-conveners: Meghan Cronin and Terry Joyce

7:30 - 8:00 Breakfast

8:00 - 8:30 Welcome and Introductions

8:30-9:00: Ocean frontal effects on the atmosphere: A synthesis of observations and models - *Shang-Ping Xie (invited)*

9:00-9:20: Recirculation in the Kuroshio Extension - *Steve Jayne*

9:20-9:40: An observational analysis of the variability of the sea surface heat flux in the Kuroshio Extension region - *Masanori Konda*

9:40-10:00: Interannual Variability of the North Pacific Subtropical Mode Water: New Insights from the KESS Profiling Float Program - *Bo Qiu*

10:00-10:20: Coffee Break

10:20-10:50: Ocean convection within the wintertime Gulf Stream and interannual changes in the N. Atlantic storm track: some early results from CLIMODE - *Terrence Joyce (invited)*

10:50-11:10: Momentum, Heat and Mass Exchange in Extreme Conditions during CLIMODE - *James Edson*

11:10-11:30: Episodic Mode Water Formation: Atmospheric Controls and Trends - *Jeffrey Shaman*

11:30-11:50: - Sources and Predictability of Anomalies in North Atlantic Subtropical Mode Water Formation and Transformation Using the Walin Framework - *Kathie Kelly*

11:50-12:30: Key points - discussion

12:30-14:00PM: Lunch (on your own)

Session 2: Frontal Scale air-sea interaction in WBC regions

Co-conveners: Justin Small and Kathie Kelly

14:00-14:30PM: Influence of the Gulf Stream on the troposphere - *Shoshiro Minobe (invited)*

14:30-14:50PM: Air Sea Interaction over the Gulf Stream - *Ralf Hand*

14:50-15:10PM: Eighteen Degree Water from profiling floats in CLIMODE - *Lynne Talley*

15:10-15:30PM: Influences of the Kuroshio/Oyashio Extensions on air-sea heat

exchanges and storm track activity as revealed in regional atmospheric model simulation - *Bunmei Taguchi*

3:30-3:50PM: Coffee Break

15:50-16:10PM: Mesoscale air-sea interaction and feedback in the western Arabian Sea - *Hyodae Seo*

16:10-16:30PM: Air-sea interactions in the Gulf Stream region from long-term in-situ observations - *Sebastien Bigorre*

16:30-16:50PM: Ocean frontal effects on the vertical development of clouds over the western North Pacific: In situ and satellite observations - *Hiroki Tokinaga*

17:50-17:10PM: Frontal Scale Air-Sea Interaction in High Resolution Versions of the Community Climate System Model - *Frank Bryan, B. Tomas and J. Mclean*

17:10-17:50PM: Key points - discussion

18:10-20:10PM: Poster session and Reception

January 16 (Friday): Session 2 (continued)

7:30 - 8:30 Breakfast

8:30-8:50: Ocean-atmosphere Coupling over Mid-latitude Ocean Fronts - *Timothy Liu*

8:50-9:10: Ocean model representation of western boundary currents and frontal systems: How good are the strongly eddying models? - *Matthew Hecht*

Session 3a: Basin-Scale air-sea interaction in connection with WBC variability

Co-Conveners: Young-Oh Kwon and Mike Alexander

9:10-9:40: Interaction of large scale climate fluctuations with the western boundary currents in the North Pacific - *Niklas Schneider (invited)*

9:40-10:10: Decadal variability in the Kuroshio and Oyashio Extension fronts simulated in an eddy-resolving OGCM - *Masami Nonaka (invited)*

10:10-10:30: The Oceanic Eddy Heat Transport in a high resolution Ocean GCM simulation - *Kunihiro Aoki*

10:30-10:50: Coffee Break

Session 3b: Coupled interactions in the western boundary current region

10:50-11:20: Review of observed influence of SST anomalies in Western Boundary Current regions on the large-scale atmospheric circulation - *Claude Frankignoul (invited)*

11:20-11:40: Numerical and Theoretical Investigations of North Pacific

Subtropical Mode Water with Implications to Pacific Climate Variability - *Xujing Davis*

11:40-12:00: North Pacific Gyre Oscillation synchronizes climate fluctuations in the eastern and western North Pacific - *Lina Ceballos*

12:00-12:40: Key points - discussion

12:40-14:00PM: Lunch (on your own)

Session 4: Impact of upper ocean variability in WBC regions on midlatitude climate variability and predictability

Co-conveners: Hisashi Nakamura and Claude Frankignoul

14:00-14:30 : Western Boundary Current SST anomalies and their Interaction with the Atmosphere - *Yochanan Kushnir (invited)*

14:30-14:50: Winter Atmosphere – Mixed Layer Ocean Response to Geostrophic Ocean Heat Transport Variations along the Kuroshio Current Extension - *Young-Oh Kwon*

14:50-15:10: Tropical Cyclone to Extratropical Storm Transitions in the Vicinity of the Kuroshio: Sensitivity to Regional SST - *Nick Bond*

15:10-15:30: Coupled ocean-atmosphere response to wind-stress forcing over the North Pacific - *Lixin Wu*

15:30-15:50 PM: Coffee Break

15:50-16:20: Importance of midlatitude oceans in the formation of storm-tracks and

westerly jets and in their variability: A review - Hisashi Nakamura (invited)

16:20-16:40: Coupled Decadal Variability in the North Pacific: An Observationally-Constrained Idealized Model - *Qiu*

16:40-17:00: Gulf Stream effects on the NAO: theory, modeling and observations -*Michael Ghil*

17:00-17:40: Key points - discussion

January 17 (Saturday): Discussion and outlook session:

8:30-9:30 Comparison of Western Boundary Currents: Gulf Stream and Kuroshio Extension

Presenter: Kathie Kelly, Moderator: Bo Qiu

9:30-10:30 Beyond KESS and CLIMODE

Presenter: Meghan Cronin, Moderator: Nick Bond

10:30-10:50 Coffee Break

10:50-11:50 Evaluation of WBC representation in climate models

Presenter: LuAnne Thompson, Moderator: Young-Oh Kwon

12:00-1:30PM Lunch (provided)

13:30-14:30 Frontal-scale WBC air-sea interaction issues

Presenter: Justin Small, Moderator: Hisashi Nakamura

14:30-15:30 Tropical teleconnections and midlatitude WBC variability

Presenter: Mike Alexander, Moderator: Claude Frankignoul

15:30 - 17:00 Round-table discussions/writing assignment

Poster presentations:

Session 1:

- Influence of summer-time surface heat flux to the pre-condition of winter-time mixed layer observed by the Kuroshio Extension Observatory - **Kako**
- Frontal waves along the Kuroshio Extension and formation of distinctive salinity minimum - **Yasuda**
- Comparisons between KESS data and the OCCA assimilation results - **Douglass**
- The Character of North Atlantic Subtropical Mode Water Potential Vorticity Forcing - **Olsina**
- Distribution of deep near-inertial waves observed in the Kuroshio Extension - **Park**
- Oceanic response to atmospheric forcing in the Kuroshio Extension - Rainville

Session 2:

- The mechanism of the atmospheric response to the Gulf Stream in a regional climate model - **Takatama**
- High-resolution simulation of the global coupled atmosphere–ocean system using CFES - **Komori**
- Atmospheric response to the Gulf Stream in an AGCM - **Kuwano-Yoshida**
- Decadal variability of the Kuroshio Extension jet in a global eddy-resolving ocean model hindcast - **Yoshi Sasaki**
- Modification of Air-Sea Heat Fluxes by Ocean Eddies in the North Pacific - **Ivana Cerovecki and Julie McClean**

Sessions 3/4:

- On the relationship between synoptic wintertime atmospheric variability and path shifts in the Gulf Stream and Kuroshio Extension - **Joyce**
- The nonlinear connection between Labrador Sea buoyancy loss, Deep Western Boundary Current strength, and Gulf Stream path in an OGCM - **Yeager**
- Inter-annual variability of the Kuroshio transports south of Japan derived from satellite altimetry data - **Nagano**
- Manifestation of the Pacific Decadal Oscillation in the North Pacific Western Boundary Current System - **Andres**
- Influence of summer-time surface heat flux to the pre-condition of winter-time mixed layer observed by the Kuroshio Extension Observatory - **Tomita**