DARIA J. HALKIDES

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Earth and Space Research
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A. PROFESSIONAL PREPARATION

College/University	Emphasis	Degree	Year
Bryn Mawr & Haverford	Physics & Astrophysics (double major)	B.A.	1998
U. of Colorado, Boulder	Atmos./Ocean Dynamics	M.S.	2001
U. of Colorado, Boulder	Environmental Policy	I. G. C.[1]	2004
U. of Colorado, Boulder	Atmos./Ocean Dynamics	Ph.D.	2005
California Institute of Technology	Air-Sea Interaction/Circulation	Postdoc. Scholar	2007-2009

B. ACADEMIC/PROFESSIONAL APPOINTMENTS

- Research Scientist at Earth and Space Research in Seattle, WA (Feb 2015 – Present)
- Research Scientist at UCLA Joint Institute for Regional Earth System Science and Engineering (JIFRESSE) with contracts at Jet Propulsion Laboratory, Pasadena, CA (2010 – Jan 2015)
- Caltech Postdoctoral Scholar at Jet Propulsion Laboratory in Pasadena, CA (2007 – 2009)
- Part-time Research Associate, Dept. of Atmos. & Oceanic Sciences, U. Colorado, CO (2005 – 2006)
- Assistant Professor of Earth Sciences, Houghton College, NY *(teaching only)* (2004 – 2005)
- Research Assistant, Dept. of Atmos. & Oceanic Sciences, U. Colorado, Boulder, CO (1999 – 2004)

C. SELECTED PUBLICATIONS, PROJECTS AND GRANTS

C1. RELATED TO HIGH LATITUDES

Halkides, D.J., E. Larour, and various contributors (2013, 2014): Improving Climate Literacy Using The Ice Sheet System Model: A Prototype Virtual Ice Sheet Lab For Use In K-12 Classrooms. Presented at 2013 and 2014 AGU Fall Meetings. Full publication planned for after beta testing, pending funding for further development.

Halkides, D.J., N. Schlegel, E. Larour (2012, 2013): Intercomparison of Tropical-High Latitude Teleconnection Effects on Antarctic Precipitation in Atmospheric Reanalyses at Multiple Timescales. Presented at 2012 AGU Fall Meeting; 2012 SCAR Open Science Conference, Portland, OR; 2013 AMS 12th Conference on Polar Meteorology and Oceanography, in Seattle, WA. Manuscript in progress.

Halkides, D.J., E. Larour, H. Seroussi, M. Morlighem (2011): Development of improved basal friction parameterizations using ISSM: Preliminary results for Jakobshavn Ice Stream. Presented at 2011 AGU Fall Meeting. To be incorporated in paper by other ISSM team members pending model developments.

Lee, T., W. R. Hobbs, J. K. Willis, **D. Halkides**, I. Fukumori, E. M. Armstrong, A. K. Hayashi, W. T. Liu, W. Patzert, and O. Wang (2010): Record warming in the South Pacific and western Antarctica associated with the strong central-Pacific El Niño in 2009–10, GRL, 37, L19704, doi:10.1029/2010GL044865 **(contributed significant work/analysis to this paper).**

Done, J., A. Hu, E.C. Farmer, J. Yin, S. Bates, A.B. Frappier, **D.J. Halkides**, K.H. Kilbourne, R. Sriver, and J. Woodruff, (2009): The Thermohaline Circulation and Tropical Cyclones in Past, Present, and Future Climates. *Bull. Amer. Meteor. Soc.*, **90**, 1015–1017. Participated in Thermohaline Circulation breakout group.

C2. RELATED TO THE TROPICS & OCEAN SURFACE MIXED-LAYER

Halkides, D.J., D.E. Waliser, T. Lee, D. Menemenlis, B. Guan (2015), Quantifying the processes controlling intraseasonal mixed-layer temperature variability in the tropical Indian Ocean, JGR Oceans, 120, *doi:*10.1002/2014JC010139.

[1] A writing intensive, interdisciplinary graduate degree similar to an M.A., but not associated with a specific department.

Guan, B., D. E. Waliser, T. Lee, and **D. J. Halkides** (2014), Influence of the Madden-Julian Oscillation on the Indian Ocean cross-equatorial heat transport, GRL, 10/2014; DOI: 10.1002/2014GL061789.

Guan, B., T. Lee, **D. J. Halkides**, and D. E. Waliser (2014), Aquarius surface salinity and the Madden-Julian Oscillation: The role of salinity in surface layer density and potential energy, GRL, 41, doi:10.1002/2014GL059704.

Halkides, D.J., S. Lucas, D.E. Waliser, T. Lee, R. Murtugudde (2011), Mechanisms controlling mixed-layer temperature variability in eastern tropical Pacific on the intraseasonal timescale, GRL, 38, 17, doi:10.1029/2011GL048545.

Halkides, D.J. and T. Lee (2011), Seasonal mixed-layer temperature and salinity budgets along the southwestern tropical Indian Ocean thermocline ridge. Dyn. Atmos. & Oceans., 51, 3, 77-93, doi:10.1016/j.dynatmoce.2011.03.002.

Halkides, D.J., T. Lee, S. Kida (2011), Mechanisms controlling seasonal mixed-layer temperature and salinity of the Indonesian Seas, Ocean Dynamics, DOI 10.1007/s10236-010-0374-3.

Halkides, D.J. and T. Lee (2009), Mechanisms controlling seasonal-to-interannual mixed-layer temperature variability in the southeastern tropical Indian Ocean, J. Geophys. Res., 114, C02012, doi:10.1029/2008JC004949.

Halkides, D.J., Weiqing Han, T. Lee, Yukio Masumoto (2007), Effects of sub-seasonal variability on seasonal-to-interannual Indian Ocean meridional heat transport. Geophys. Res. Lett., 34, L12605, doi:10.1029/2007GL030150.

Han, Weiqing, Dongliang Yuan, W. Timothy Liu, and **D.J. Halkides** (2007): Intraseasonal variability of Indian Ocean sea surface temperature during boreal winter: MJO versus sub-monthly forcing and processes. *J. of Geophys. Res.*, 112, C04001.

Halkides, D.J., Weiqing Han, Peter J. Webster (2006), Effects of the seasonal cycle on the development and termination of the Indian Ocean Zonal Dipole Mode. J. of Geophys. Res., 111, C12017, doi:10.1029/2005JC003247.

Halkides. D.J. (2005) Dissertation, "Effects of the seasonal cycle on interannual SST variability in the Indian Ocean," U. Colorado, Boulder, supervisor Weiqing Han. Hierarchical model and data study of air-sea coupling.

Halkides. D.J. (2002) M.S. Thesis, "Signaling the Monsoon: The Search for a South Asian Rainfall Prediction Measure," U. Colorado, Boulder, supervisor P.J. Webster. On precipitation and atmospheric teleconnections.

C3. RECENT AWARDS

ROSES 13-PO13-0037, as PI: Science motivations for remote sensing of ocean mixed-layer properties. (~$200K/yr for 3 years, May 2014 - April 2017.

Unsolicited to NASA Cryospheric Sciences, as Science-PI (Eric Larour as Institutional-PI): The Virtual Ice Sheet Laboratory: A Prototype For Improving Climate & Sea Level Literacy (March 2014-October 2015)

JPL Center for Climate Science (CCS) funding for workshop on upper ocean mixed-layer research, January 2015 (awarded based on proposal to CCS; undisclosed amount)

D. SYNERGISTIC ACTIVITIES

D1. PROFESSIONAL/COMMUNITY ACTIVITIES

- **Lead Organizer for JPL Ocean Mixed-Layer Workshop**, Pasadena, CA (Jan 20-22, 2015); **writing summary**
- **Proposal Review Panelist for NASA** (student proposals in 2010-12; full proposals in 2013)
- **Journal Reviewer** (GRL; JGR; Dynamics of Atm. and Oceans; J. Climate; Ocean Dynamics; The Cryosphere)
- **Organization Committee** for ISSM (Ice Sheet System Model) Workshop in Pasadena (2011) and Irvine (2012), CA
- **Co-Lead Organizer for JPL Sea Level Workshop**, Pasadena, CA (Sept. 29-31, 2011); **edited workshop report**
- **Session Convener** at AGU 2011 Fall Meeting and (upcoming) 2016 Ocean Sciences Meeting
- **Member of AGU, AMS, WCRP-ECSN**.

D2. TEACHING AND EDUCATION OUTREACH ACTIVITIES

- **ISSM Virtual Ice Sheet Lab (VISL) curriculum lead and co-developer** (not yet public; 2013-present)
- **Member of GLOBE International Scientists Network** (http://www.globe.gov/about/overview; joined 2015)
- **Member of Polar Educators International** (http://www.polareducator.org/; joined 2015)
- **Outreach Volunteer** at ESR's ocean sciences booth at **Shoreline Science Festival** in Seattle, WA (May 9, 2015)

- **Advised several student interns** in JPL's Student Independent Research Internship (SIRI) program (2012-2014)
- **Ocean Sciences Bowl Volunteer Science Judge** for grades 9-12 (2014)
- **Outreach Volunteer** at JPL Annual Open House (2011-2013)
- **Assistant Adjunct Professor** at Houghton College; **Earth System Science, Geology, GIS, Astronomy (2004-5)**
- T**eaching Assistant and Tutor** for undergraduate climate and weather courses at CU Boulder (2002-3)
- **Science Outreach Volunteer** at multiple elementary schools in/near Boulder, CO (2000-2003)
- T**eaching Assistant at NSF Summer Science Program** (SSP) in Physics & Astronomy (Ojai, CA; 1998)
- **City Year AmeriCorps Volunteer** in inner-city Chicago (1998-99; worked with K-12 students on math, science)

D3. COLLABORATORS AND OTHER AFFILIATIONS

Collaborations Over The Last 48 Months:

- **Dimitris Menemenlis** (JPL): (~ 12 mo) Collaborating on development of science justification for remote sensing observations of ocean surface mixed-layer (he is co-I on a NASA ROSES PO award for which I am PI)
- **Nicole Schlegel** (UCLA): (~3 years) Proposal writing; consulting for VISL; side project on tropical-polar teleconnection effects on ice sheet Surface Mass Balance (co-author on my presented work)
- **Bin Guan** (UCLA): (~2+ years) Upper ocean mixed-layer processes and salinity
- **Eric Larour** (Caltech/JPL): (~4 year) On (1) understanding sensitivity of glacier velocities in ISSM to parameters in basal drag equation; (2) understanding tropical-polar teleconnection effects on polar ice sheet surface mass balance; (3) Designing, establishing and coordinating VISL curriculum and ISSM graphic interface
- **Tong Lee** (Caltech/JPL): (~8 years) Former Postdoc Advisor; various collaborations, including ocean mixed layer heat and salt budgets in Indian Ocean, Pacific Ocean and Indonesian seas, using Estimating the Circulation and Climate of the Ocean (ECCO) products, and, on understanding ENSO-Antarctic teleconnection
- **Duane Waliser** (Caltech/JPL): (~4 years) On ocean mixed layer heat, salt and other variability in the tropics for timescales associated with the Madden-Julian Oscillation (30-100 days)

Graduate and Postdoctoral Advisors

- Peter Webster (M.S.): Georgia Institute of Technology, Atlanta, GA (previously at CU Boulder)
    - *M.S. Thesis Topic: Climatic teleconnections to South Asian and Northern Australian monsoon rainfall and the search for an intraseasonal monsoon rainfall index.*
- Weiqing Han (Ph.D.): U. of Colorado & National Center for Atmospheric Research (NCAR)
    - *Dissertation: The effects of the seasonal cycle on interannual SST variability in the Indian Ocean*
- Tong Lee (Postdoc advisor): Caltech/Jet Propulsion Laboratory, Pasadena, CA

Thesis Advisor and Postgraduate Scholar Sponsors over the Last Five Years:

- Acted as co-supervisor to Caltech Postdoc Nicole Schlegel (2012-13), sponsored by Collaborator Larour