

Xiaochun Wang, Ph.D.

Email: xiaochun.wang@jpl.nasa.gov

Tel: (818) 393-7231

Education

- 2001 Ph.D. in Meteorology, University of Hawaii at Manoa, Honolulu, U.S.A.
- 1996 M.S. in Applied Mathematics, University of Alberta, Edmonton, Canada
- 1989 M.S. in Meteorology, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, P.R. China
- 1986 B.S. in Meteorology, Nanjing Institute of Meteorology, Nanjing, P.R. China

Professional Experience

- Oct. 2008- Present Assistant Researcher, Associate Project Scientist, Joint Institute for Regional Earth System Sciences and Engineering (JIFRESSE), University of California at Los Angeles (UCLA), Los Angeles, California, U.S.A.
- Jan. 2004- Oct. 2008 Senior Physics Engineer, Raytheon Technical Services Company, Pasadena, California., U.S.A.
- Jan. 2002- Jan. 2004 Caltech Postdoctoral Scholar, Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, California, U.S.A.
- Aug. 1996-Dec. 2001 Research Assistant, Dept. of Meteorology, University of Hawaii at Manoa, Honolulu, U.S.A.
- Jan. 1995-Aug. 1996 Teaching Assistant and Research Assistant, Dept. of Math. Sci., University of Alberta, Edmonton, Canada
- Sept. 1992-Dec. 1994 Research Associate, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, P. R. China
- Aug. 1989-Aug. 1992 Practice Researcher, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, P. R. China

Awards and Honors

- Achievement Award, Raytheon Technical Services Company, 2008
- Peer Award, Raytheon Technical Services Company, 2007
- Team Award, Raytheon Technical Services Company, 2005
- Global Change Scholarship, American Meteorological Society, 2001
- Pan Pacific Scholarship, University of Hawaii, 1996
- J. Gordon Kaplan Graduate Student Award, University of Alberta, Alberta, 1995

Synergistic Activities

For community service, Dr. Wang has served as Associate Editor for Atmosphere and Ocean and reviewer for many journals (e.g., J. of Climate, J. of Physical Oceanography, J. Geophys. Res., Geophys. Res. Lett., Progress in Oceanography), NSF proposals, NASA proposals, North Pacific Research Board proposals, and as advisor of summer intern students of JPL and graduate students at UCLA. From 2006 to 2010, he served as an Executive Committee Member of the Southern California Chapter of the Chinese-American Oceanic and Atmospheric Association (COAA), with duties to organize annual fall scientific conferences and winter social events for members.

Referred English Publication List

- [1] Shen, S.S.P., **X. Wang**, R. Li, and Y. Liang, 1995: Optimal weighting scheme for averaging regional temperature I: Theoretical analysis. Chinese Sciences Bulletin, 1351-1356, Vol. 40, No. 16.
- [2] Shen, S.S.P., and **X. Wang**, 1997: Optimal average of regional temperature with sampling error estimation. Atmosphere-ocean, 147-160, Vol. 35, No. 2.
- [3] **Wang, X.**, and G. Wu, 1997: The analysis of the relationship of spatial modes of summer precipitation anomalies over China and the general circulation. Chinese Journal of Atmospheric Sciences, 133-142, Vol. 21, No. 2.
- [4] **Wang, X.**, and G. Wu, 1997: Regional characteristics of summer precipitation anomalies over China. Acta Meteorologica Sinica, 153-163, Vol. 11, No. 2.
- [5] **Wang, X.**, and S.S.P. Shen, 1999: Estimation of spatial degrees of freedom of a climate field. J. Climate, 1280-1291, Vol. 12, No. 5. (cited by 43)
- [6] Jin, F.-F., M. Kimoto, and **X. Wang**, 2001: A model of decadal ocean-atmosphere interaction in the North Pacific basin. Geophys. Res. Lett., 1531-1534, Vol. 28, No. 8. (cited by 25)
- [7] **Wang, X.**, F.-F. Jin, and Y. Wang, 2003: A tropical ocean recharge mechanism for climate variability. Part I: Equatorial heat content changes induced by the off-equatorial wind. J. Climate, 3585-3598, Vol. 16, No. 22. (Cited by 25)
- [8] **Wang, X.**, F.-F. Jin, and Y. Wang, 2003: A tropical ocean recharge mechanism for climate variability, Part II: A unified theory for decadal and ENSO modes. J. Climate, 3599-3616, Vol. 16, No. 22. (Cited by 23)
- [9] **Wang, X.**, Y. Chao, 2004: Simulated sea surface salinity variability in the tropical Pacific. Geophys. Res. Lett., Vol. 31, L02302, doi:10.1029/2003GL01846. (cited by 56).
- [10] **Wang, X.**, Y. Chao, C. Dong, J. Farrara, Z. Li, J. C. McWilliams, J. D.

- Paduan, L. K. Rosenfeld, C. K. Shum, and Y. Wang, 2006: Tidal simulation using Regional Ocean Modeling System. In Proceedings of the Symposium on 15 Years of Progress in Radar Altimetry, European Space Agency, SP-614.
- [11] Li, P., Y. Chao, Q. Vu, Z. Li, J. Farrara, H. Zhang, **X. Wang**, 2006: OurOcean – An integrated solution to ocean monitoring and forecasting. In Proceedings of 2006 Oceans Conference.
- [12] **Wang, X.**, Y. Chao, C. Dong, J. Farrara, Z. Li, J. C. McWilliams, J. D. Paduan, L. R. Rosenfeld, 2009: Modeling tides in Monterey Bay, California. Deep-Sea Research II, 219-231, Vol. 56, doi:10.1016/j.dsr2.2008.08.012. (cited by 52)
- [13] Song, Y.T., R. Gross, **X. Wang**, and V. Zlotnicki, 2010: A non-Boussinesq terrain following OGCM for oceanographic and geodetic applications. Advances in Geosciences, 18 (Ocean Sciences, Eds. Gan et al.), 63-86.
- [14] Breaker, L., Y.-H., Tseng, and **X. Wang**, 2010: On the natural oscillations of Monterey Bay: observations, modeling, and origins. Progress in Oceanography, 86, 380-395.
- [15] **Wang, X.**, Y. Chao, C. K. Shum, Y. Yi, and H. S. Fok, 2012: Comparison of two methods to assess ocean tide models. J. Atmos. Oceanic Technology, 29, 1159-1167, <http://dx.doi.org/10.1175/JTECH-D-11-00166.1>
- [16] Farrara, J., Y. Chao, Z. Li, **X. Wang**, X. Jin, H. Zhang, P. Li, Q. Vu, P. O. Olsson, G. C. Schoch, M. Halverson, M. A. Moline, J. C. McWilliams, F. Colas, 2013: A data-assimilative ocean forecasting system for the Prince William Sound and its evaluation of its performance during Sound Predictions 2009. Continental Shelf Research, 63, 193-208, <http://dx.doi.org/10.1016/j.csr.2012.11.008>
- [17] Colas, F. **X. Wang**, X. Capet, Y. Chao, and J. C. McWilliams, 2013: Untangling the roles of wind, run-off and tides in Prince William Sound. Continental Shelf Research, 63, 79-89, <http://dx.doi.org/10.1016/j.csr.2012.05.002>.
- [18] **Wang, X.**, Y. Chao, D. R. Thompson, S. A. Chien, J. Farrara, P. Li, Q. Vu, and H. Zhang, 2013: Multi-model ensemble forecasting and glider path planning in the Mid-Atlantic Bight. 63, 223-234, Continental Shelf Research, <http://dx.doi.org/10.1016/j.csr.2012.07.006>. (cited by 9)
- [19] **Wang, X.**, Y. Chao, H. Zhang, J. Farrara, Z. Li, X. Jin, K. Park, F. Colas, J. C. McWilliams, C. Paternostro, C. K. Shum, Y. Yi, C. Schoch, and P. Olsson, 2013: Modeling tides and their influence on circulation in Prince William Sound, Alaska. Continental Shelf Research, 63, 126-137, <http://dx.doi.org/j.csr.2012.08.016>. (cited by 9)

- [20] Halpern, D., D. Menemenlis, **X. Wang**, 2015: Impact of Data Assimilation on ECCO2 Equatorial Undercurrent and North Equatorial Countercurrent in the Pacific Ocean. *J. Atmos. Oceanic Technology*, 32, 131-142, DOI: 10.1175/JTECH-D-14-00025.1
- [21] Balmaseda, M.A., F. Hernandez, A. Storto, M.D. Palmer, O. Alves, L. Shi, G.C. Smith, T. Toyoda, M. Valdivieso, B. Barnier, D. Behringer, T. Boyer, Y.-S. Chang, G.A. Chepurin, N. Ferry, G. Forget, Y. Fujii, S. Good, S. Guinehut, K. Haines, Y. Ishikawa, S. Keeley, A. Köhl, T. Lee, M.J. Martin, S. Masina, S. Masuda, B. Meyssignac, K. Mogensen, L. Parent, K.A. Peterson, Y.M. Tang, Y. Yin, G. Vernieres, **X. Wang**, J. Waters, R. Wedd, O. Wang, Y. Xue, M. Chevallier, J.-F. Lemieux, F. Dupont, T. Kuragano, M. Kamachi, T. Awaji, A. Caltabiano, K. Wilmer-Becker, F. Gaillard, 2015: The Ocean Reanalyses Intercomparison Project (ORA-IP). *J. Operational Oceanography*, 8, 80-97, DOI: 10.1080/1755876X.2015.1022329
- [22] Valdivieso, M., K. Haines, M. Balmaseda, Y.-S. Chang, M. Drevillon, N. Ferry, Y. Fujii, A. Kohl, A. Storto, T. Toyoda, **X. Wang**, J. Waters, Y. Xue, Y. Yin, B. Barnier, F. Hernandez, A. Kumar, T. Lee, S. Masina, K. A. Peterson, 2015, An assessment of air-sea heat fluxes from ocean and coupled reanalyses, *Clim. Dyn.*, DOI 10.1007/s00382-015-2843-3.
- [23] Toyoda, T., Y. Fujii, T. Kuragano, M. Kamachi, Y. Ishikawa, S. Masuda, K. Sato, T. Awaji, F. Hernandez, N. Ferry, S. Guinehut, M. J. Martin, K. A. Peterson, S. A. Good, M. Valdivieso, K. Valdivieso, A. Stortom S. Masina, A. Kohl, H. Zuo, M. Balmaseda, Y. Yin, L., Shi, O. Alves, G. Smith, Y.-S. Chang, G. Vernieres, **X. Wang**, G. Forget, P. Heimbach, O. Wang, I. Fukumori, T. Lee, 2015, Intercomparison and validation of the mixed layer depth fields of global ocean syntheses, *Clim. Dyn.*, DOI 10.1007/s00382-015-2637-7
- [24] Toyoda, T., Y. Fujii, T. Kuragano, N. Kosugi, D. Sasano, M. Kamachi, Y. Ishikawa, S. Masuda, K. Sato, T. Awaji, F. Hernandez, N. Ferry, S. Guinehut, M. Martin, K. A. Peterson, S. A. Good, M. Valdivieso, K. Haines, A. Haines, S. Masina, A. Kohl, Y. Yin, L. Shi, O. Alves, G. Smith, Y.-S. Chang, G. Vernieres, **X. Wang**, G. Forget, P. Heimbach, O. Wang, I. Fukumori, T. Lee, H. Zuo, M. Balmaseda, 2015, Interannual-decadal variability of wintertime mixed layer depths in the North Pacific detected by an ensemble of ocean syntheses, *Clim. Dyn.*, DOI 10.1007/s00382-015-2762-3
- [25] Shi, L., O. Alves, R. Wedd, M. A. Balmaseda, Y. Chang, G. Chepurin, N. Ferry, Y. Fujii, F. Gaillard, S. A. Good, S. Guinehut, K. Haines, F. Hernandez, T. Lee, M. Palmer, K.A. Peterson, S. Masuda, A. Storto, T. Toyoda, M. Valdivies, G. Vernieres, **X. Wang**, Y. Yin, 2015, An assessment of upper ocean salinity content from the Ocean Reanalyses Inter-comparison Project (ORA-IP), *Clim. Dyn.*, DOI 10.1007/s00382-015-2868-7

[26] Storto, A., S. Masina, M. Balmaseda, S. Guinehut, Y. Xue, T. Szekely, I. Fukumori, G. Forget, Y.-S. Chang, S. A. Good, A. Hohl, G. Vernieres, N. Ferry, K. A. Peterson, D. Behringer, M. Ishii, S. Masuda, Y. Fujii, T. Toyoda, Y. Yin, M. Valdivieso, B. Barnier, T. Boyer, T. Lee, J. Gourrion, O. Wang, P. Heimback, A. Rosati, R. Kovach, F. Hernandez, M. J. Martin, M. Marti, T. Marti, K. Mogensen, O. Alves, K. Haines, **X. Wang**, 2015, Steric sea level variability (1993–2010) in an ensemble of ocean reanalyses and objective analyses, *Clim. Dyn.*, DOI 10.1007/s00382-015-2554-9

[27] **Wang, X.**, L. Zhao, Z. Li, D. Menemenlis, 2015, Regional ocean forecasting systems and their applications: Design considerations of such a system for the South China Sea, *Aquatic Ecosystem Health and Management*, 18(4), 443-453, DOI: 10.1080/14634988.2015.1112123

[28] Chevallier, M, G. C. Smith, F. Dupont, J.-F. Lemieux, G. Forget, Y. Fujii, F. Hernandez, R. Msadek, K. A. Peterson, A. Storto, T. Toyoda, M. Valdivieso, G. Vernieres, H. Zuo, M. Balmaseda, Y.-S. Chang, N. Ferry, G. Garric, K. Haines, S. Keeley, R. M. Kovach, T. Kuragano, S. Masina, Y. Tang, H. Tsujino, **X. Wang**, 2015, *Clim, Dyn*, Intercomparison of the Arctic sea ice cover in global ocean–sea ice reanalyses from the ORA-IP project, DOI 10.1007/s00382-016-2985-y

[29] Zhao, L.-Q.; **X. Wang**, 2018, Numerical investigation of parallel plane jets at low Reynolds number, *European Journal of Mechanics /B Fluids*, 67, 211-219

[30] Hu, Z.-Z., A. Kumar, J. Zhu, B. Huang, Y. Tseng, **X. Wang**, 2017, On the Shortening of the Lead Time of Ocean Warm Water Volume to ENSO SST Since 2000, *Nature Scientific Reports*, 7: 4294, DOI:10.1038/s41598-017-04566-z

[31] Yi, J., J. Johnson, **X. Wang**, 2017, On the estimation of wind speed diurnal cycles using CYGNSS and ASCAT measurements, *Geoscience and Remote Sensing Letter*, Vol. 16, No. 2, 168-171

[32] **Wang, X.**, Y. Zou, X. He, 2018, Evaluation of ocean forecasting in the East China Sea, Chapter 14 in *Coastal Environment, Disaster, and Infrastructure*, X. San Liang and Yuanzhi Zhang, IntechOpen, DOI: 10.5772/intechopen.80319.

[33] Wu, Q. , **X. Wang**, X. He, W. Liang, 2018, Validation and Application of SMAP SSS Observation in Chinese Coastal Seas, Chapter 15 in *Coastal Environment, Disaster, and Infrastructure*, X. San Liang and Yuanzhi Zhang, IntechOpen, DOI: 10.5772/intechopen.80318

[34] Lin, Z., **X. Wang**, P. Xiu, F. Chai, Q. Wu, 2019, Boundary phosphate transport of the East China Sea and its influence on biological processes, *J. of Geoscience and Environment Protection*, 7, 79-104

