Curriculum Vitae

Dr. Zouhair Lachkar
Senior Research Scientist
Arabian Center for Climate and Environmental Sciences (ACCESS), NYU Abu Dhabi
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Education

2007	Ph.D.	Environmental Sciences, Pierre & Marie Curie University, Paris, France
2002	M.Sc.	Atmosphere, Ocean & Environment, Paul Sabatier University, Toulouse, France
	M.Sc.Eng.	Meteorology, Ecole Nationale de Météorologie (ENM), Toulouse, France
	M.Sc.Eng.	Meteorology & Environment, Hassania Institute of Civil Engineering (EHTP), Casablanca, Morocco

Positions

Mar 2022- present	Senior research scientist, Arabian Center for Climate and Environmental Sciences, New York University Abu Dhabi, Abu Dhabi, UAE.
Dec 2014- Feb 2022	Senior research scientist, Center for Prototype Climate Modeling, New York University Abu Dhabi, Abu Dhabi, UAE.
Aug 2014- Dec 2014	Visiting scientist, Courant Institute of Mathematical Sciences, New York University, New York, USA.
2010-2014	Lecturer, Environmental Physics, ETH Zurich, Zurich, Switzerland.
2007-2010	Postdoctoral Associate, Environmental Physics, ETH Zurich, Zurich, Switzerland.
2003-2007	Research Associate, Laboratoire des Sciences du Climat et de l'Environnement, Saclay, France.
2002-2003	Meteorologist, Moroccan Weather Service, Casablanca, Morocco.

Main Areas of Research

Marine biogeochemistry; Ocean circulation; Climate change; Marine carbon cycle; Ocean modeling; Ocean deoxygenation; Oxygen minimum zones; Ocean acidification; Coastal upwelling systems; Arabian Sea; Arabian Gulf.

Recognition

Journal roles:

- Associate Editor for Frontiers in Marine Science - Marine Biogeochemistry (2022-).
- Editorial Board Member, Elsevier's Deep Sea Research Part II: Topical Studies in Oceanography (2022-).
- Guest Editor for Elsevier's Deep Sea Research Journal (2019-2022).
- Invited to join the Editorial Board of the AGU Journal of Geophysical Research (JGR) (2021, declined).
- Peer Reviewer for top-field journals (Geophysical Research Letters, Progress in Oceanography, Nature Geosciences, Deep Sea Research, Global Biogeochemical Cycles, Frontiers in Marine Science) and research proposals (NSF, NOAA, French ANR, German DFG, UK NERC,...).

Public speaking:

- Invited keynote speaker at the SOLAS Open Science Conference, Cape Town, South Africa, 2022
- Invited keynote speaker at the KAUST Ocean Carbon in Tropical Seas Conference, Thuwal, Saudi Arabia, 2021
- Invited talk at NYUAD institute (Oct 2019): Oceans Under Climate Stress Warming Up, Losing Breath, Turning Sour
- Invited keynote speaker at the Gordon Research Conference on marine biogeochemisty, Hong Kong, China, 2018
- Invited keynote speaker at the International Liege Colloquium on Ocean Dynamics, Liege, Belgium, 2014
- Invited keynote speaker at the Gordon Research Conference on coastal ocean circulation, Portland, ME, 2013

Large international research consortia membership:

- Lead member of the RECCAP2 project coordinated by the Global Carbon Project (2019-2022).
- Member of the Surface Ocean Lower Atmosphere Study (SOLAS) Implementation Team for the Upwelling Systems theme (2022).
- Member of the Surface Ocean Lower Atmosphere Study (SOLAS) Implementation Team for the Indian Ocean theme (2022).

Conference chairing:

- Session on ocean deoxygenation, ASLO Ocean Sciences Meeting, San Diego, CA, USA, 2020.
- Session on marine ecological shifts, IMBER Open Science Conference, Bergen, Norway, 2014.

Awards:

- Top 10% most downloaded paper 2019 (Geophysical Research Letters)
- Swiss NSF grant (co-PI), project N 200021_149384, US$450 000, (2013-2017).
- IMBER (Integrated Marine Biosphere Research) Best Young Scientist award (2010).
- CEA Fellowship from the French Atomic Energy Authority, awarded for Ph.D. research (2003-2007).
- BGF award , French Government excellence scholarship (2000-2002).

Mentoring & Teaching Experience

2015-2020	Supervisor of 3 research associates (D. Hailegeorgis, M. Salim, M. Futui) Advisor for 3 postdoctoral researchers (M. Al Azhar, A. de Verneil, P. Vallivattathillam)
2010-2015	Supervisor of 4 Master's theses (C. Rieper, Q. Shuangyi, P. Pika, F. Lacroix) co-Supervisor of 2 PhD thesis projects (G. Turi, E. Lovecchio)
Feb 2015	Lecturer at NIO winter school on marine mathematical modeling, Goa, India
2012-2014	Coordinator of "Systems Analysis", Environmental Sciences Department, ETH Zurich, [Bachelor Level]
2010-2012	Lecturer for "Global Biogeochemical Cycles and Climate", Environmental Sciences

Department, ETH Zurich, [Master Level]

2009-2012 Tutor for "Term paper in Biogeochemistry and Pollutant Dynamics", Environmental Sciences Department, ETH Zurich, [Master Level]

Research Impact

(Source: ResearchGate, Oct 2022)
Number of publications: 40
Number of citations: 2120
H-index: 23

Press coverage

- September 20, 2022: NYUAD researchers find the oxygen levels in the Arabian Gulf are declining, *WIRED*
- September 19, 2022: Abu Dhabi researchers discover alarming changes in Arabian Gulf waters, *Gulf News*
- September 18, 2022: Low-oxygen zone is expanding in the Arabian Gulf, *Earth.com*
- September 15, 2022: UAE: Researchers discover expanding, intensifying low-oxygen zone in the Arabian Gulf, *Khaleej Times*
- November 12, 2021: Tracking oxygen depletion in the Arabian Sea, *Nature Asia*
- January 23, 2020: Shifting Desert Winds Could Turn Arabian Fisheries Barren, *Al Fanar Media*
- October 28, 2019: No Oxygen, No Life Feature, *The Sustainabilist Magazine, October Issue*
- September 26, 2019: Desert dust is key to sustaining marine ecosystem, *Dubai Gazette*
- September 25, 2019: Desert dust is key to sustaining Arabian Sea's marine ecosystem: Study *Emirates News Agency*
- September 25, 2019: Desert dust sustains life in Arabian Sea, UAE research finds *Khaleej Times* | NYUAD Press Release
- June 16, 2019: World's largest marine dead zone may reach UAE's shores, *The National*
- June 16, 2019: NYUAD researchers look into Arabian Sea dead zone expansion, *Gulf News UAE*
- May 29, 2019: Global warming could enlarge world's largest dead zone, *Nature Middle East*
- July 17, 2018: Expanding 'dead zone' in Arabian Sea raises climate change fears, *Arabian Business* / *Yahoo News* / *France 24* / *Gulf News* / *Physics.org* / *The Straits Times*

Journal Publications (peer reviewed)

- Vallivattathillam, P., Suresh, I., Lengaigne, M., Vialard, J., Izumo, T., Sadhvi, K., **Lachkar, Z.**, and Uskaikar, H., Mechanisms of the Southern Arabian Sea summer Primary Productivity weakening in response to anthropogenic forcing in CMIP5 models, Journal of Geophysical Research, Biogeosciences, submitted.

- Shinoda, T., Jensen, T., G., **Lachkar, Z.**, Masumoto, Y., Seo, H., Modeling the Indian Ocean, Chapter in The Indian Ocean and its role in the global climate system, Elsevier, accepted.

- Hood, R., R., Rixen, T., Levy, M., Hansell, D., **Lachkar, Z.**, Huggett, J., Indian Ocean Biogeochemistry and pH variability, Chapter in The Indian Ocean and its role in the global climate system, Elsevier, accepted.

- **Lachkar, Z**., Mehari, M., Levy, M., Paparella, F., and Burt, J., Recent expansion and intensification of hypoxia in the Arabian Gulf and its drivers, Frontiers in Marine Science, Sec. Marine Biogeochemistry, doi: 10.3389/fmars.2022.891378, 2022.

- De Verneil, A., **Lachkar, Z.**, Smith, S., Levy, M., Evaluating the Arabian Sea as a regional source of atmospheric CO_2: seasonal variability and drivers, Biogeosciences, 19, 907–929, https://doi.org/10.5194/bg-19-907-2022, 2022.

- Levy, M., Resplandy, L., Palter, J., B., Couespel, D. and **Lachkar Z.**, The crucial contribution of mixing to present and future ocean oxygen distribution, Chapter in Ocean mixing - Drivers, Mechanisms and Impacts, 329-344, Elsevier, 2022.

- **Lachkar, Z.**, Mehari, M., Al Azhar, M., Lévy, M., and Smith, S.: Fast local warming is the main driver of recent deoxygenation in the northern Arabian Sea, Biogeosciences, 18, 5831–5849, https://doi.org/10.5194/bg-18-5831-2021, 2021.

- Rixen, T., Cowie, G., Gaye, B., Goes, J., do Rosario Gomes, H., Hood, R., R., **Lachkar, Z.**, Schmidt, H., Segschneider, J., and Singh, A., Reviews and syntheses: Present, past, and future of the oxygen minimum zone in the northern Indian Ocean, Biogeosciences, 17, 6051-6080, doi:10.5194/bg-17-6051-2020, 2020.

- Hailegeorgis D., **Lachkar Z.** Rieper C., and N. Gruber, A Lagrangian study of the contribution of the Canary upwelling to the nitrogen budget of the open North Atlantic, Biogeosciences, doi:10.5194/bg-17-1-2020, 2020.

- Guieu C. Al Azhar M., Aumont O., Mahowald N., Levy M., Ethe C. and **Lachkar Z.**, Major impact of dust deposition on the productivity of the Arabian Sea, Geophysical Research Letters, doi:10.1029/2019GL082770, 2019.

- **Lachkar, Z**., Smith, S. and M. Levy, Strong intensification of the Arabian Sea Oxygen Minimum Zone in response to Arabian Gulf warming, Geophysical Research Letters, doi:10.1029/2018GL081631, 2019.

- **Lachkar, Z**., Levy, M. and S. Smith, Intensification and deepening of the Arabian Sea Oxygen Minimum Zone in response to increase in Indian monsoon wind intensity, Biogeosciences, 15, 159-186, 2018.

- Al Azhar, M., **Lachkar, Z**., Levy, M. and Smith, S.: Oxygen minimum zone contrasts between the Arabian sea and Bay of Bengal implied by differences in remineralization depth, Geophysical Research Letters, doi: 10.1002/2017GL075157, 2017.

- Lovecchio, E., Gruber, N., Münnich, M., and **Lachkar, Z**.: On the long-range offshore transport of organic carbon from the Canary Upwelling System to the open North Atlantic, Biogeosciences, 14, 3337-3369, doi:10.5194/bg-14-3337-2017, 2017.

- **Lachkar, Z.**, S. Smith M. Levy and O. Pauluis: Eddies reduce denitrification and compress habitats in the Arabian Sea, Geophysical Research Letters, doi: 10.1002/2016GL069876, 2016.

- Turi, G., N., Gruber, **Z., Lachkar** and M. Münnich: Climatic modulation of recent trends in ocean acidification in the

California Current System, Environmental Research Letters, doi:10.1088/1748-9326/11/1/014007, 2016.

- Nagai, T., N. Gruber, H. Frenzel, **Z. Lachkar**, J. C. McWilliams and G.-K. Plattner: Dominant role of eddies and filaments in the offshore transport of carbon and nutrients in the California Current System, Journal of Geophysical Research Oceans, doi: 10.1002/2015JC010889, 2015.

- Levin, L., Liu, K.-K.. Emeis, K.-C., Breitburg, D.-L., Cloern,J., Deutsch ,C., Giani, M., Goffart, A., Hofmann, E. E., **Lachkar, Z**. et al., Comparative biogeochemistry–ecosystem–human interactions on dynamic continental margins, Journal of Marine Systems, doi:10.1016/j.jmarsys.2014.04.016, 2014.

- Fendereski, F., M. Vogt, M. R. Payne, **Z. Lachkar**, N. Gruber, A. Salmanmahiny, and S. A. Hosseini: Biogeographic classification of the Caspian Sea, Biogeosciences, 11, 6451-6470, doi:10.5194/bg-11-6451-2014, 2014.

- **Lachkar, Z**.: Effects of upwelling increase on ocean acidification in the California and Canary Current systems, Geophysical Research Letters, doi: 10.1002/2013GL058726, 2014.

- G. Turi, **Lachkar, Z.** and Gruber., N.: "Spatiotemporal variability and drivers of pCO2 and air-sea CO2 fluxes in the California Current System: An eddy-resolving modeling study", Biogeosciences, 11, 671-690, doi:10.5194/bg-11-671-2014, 2014.

- Salihoglu, B., Neuer, S., Painting, S., Murtugudde, R., Hofmann, E. E., Steele, J. H., Hood, R. R., Legendre, L., Lomas, M. W., Wiggert, J., Ito, S., **Lachkar, Z**., Hunt, G., Drinkwater, K. F, Sabine, C. L. (2013): Bridging marine ecosystem and biogeochemistry research: Lessons and recommendations from comparative studies, J. Mar. Syst., Volumes 109–110, Pages 161-175, 2013.

- **Lachkar, Z.**, and N. Gruber, Response of biological production and air-sea CO_2 fluxes to upwelling intensification in the California and Canary Current Systems, J.Mar. Syst., Volumes 109–110, Pages 149-160, doi:10.1016/j.jmarsys.2012.04.003, 2013.

- Hauri, C., Gruber, N., Vogt, M., Doney, S. C., Feely, R. A., **Lachkar, Z.**, Leinweber, A., McDonnell, A. M. P., Munnich, M., and Plattner, G.-K., Spatiotemporal variability and long-term trends of ocean acidification in the California Current System, Biogeosciences, 10, 1-21, 2013.

- **Lachkar, Z.**, and Gruber. N.: A comparative study of biological production in eastern boundary upwelling systems using an artificial neural network, Biogeosciences, 9, 293-308, 2012.

- Gruber, N., Hauri, C., **Lachkar, Z**., Loher, D., Frolicher, T., L., and Plattner, G.K.: Rapid Progression of Ocean Acidification in the California Current System, Science, vol 337, 6091, pp. 220-223, doi: 10.1126/science.1216773, 2012.

- Gruber, N., **Z. Lachkar**, H. Frenzel, P. Marchesiello, M. Münnich, J. C. McWilliams, T. Nagai, and G.-K. Plattner, Eddy-induced reduction of biological production in eastern boundary upwelling systems, Nature Geoscience, 4, 11, 787-792, doi:10.1038/ngeo1273, 2011.

- **Lachkar, Z.,** and Gruber., N., What controls biological production in coastal upwelling systems? Insights from a

comparative modeling study, Biogeosciences, 8, 2961-2976, 2011.

- **Lachkar, Z.**, Orr, J.C., Dutay, J.C., and Delecluse, P., On the role of mesoscale eddies in the ventilation of Antarctic Intermediate Water, Deep Sea Research I, vol 56, 6, 909-925, 2009.

- **Lachkar, Z.**, Orr, J.C. and Dutay, J.C, Seasonal and mesoscale variability of oceanic transport of anthropogenic CO_2, Biogeosciences, 6, 2509-2523, 2009.

- Leloup, J., **Lachkar, Z.**, Boulanger, J. P., and Thiria, S., Detecting decadal changes in ENSO using neural networks, Climate Dynamics, Vol 28, 2-3, 147-168, doi:s00382-006-0173-1, 2007**.**

- **Lachkar, Z.**, Orr, J.C., Dutay, J.C., and Delecluse, P., Effect of mesoscale eddies on global ocean distributions of CFC-11, C-14, and CO2, Ocean Science, 3, 461-482, 2007.

Other Publications

- G Turi, **Z Lachkar**, M Münnich, N Gruber, D Loher, "Recent climatic changes enhance ongoing ocean acidification in the California Current System", IMBER Update Newsletter, 2014.

- **Z. Lachkar** and N. Gruber: "Exploring the Future Evolution of Multiple Stressors in Eastern Boundary Upwelling Systems", Ocean Carbon and Biogeochemistry News, vol 5, N2, 2012.

- S. Alin, S. Siedlecki, B. Hales, J. Mathis, W. Evans, M. Stukel, G. Gaxiola-Castro, J. M. Hernandez-Ayon, L. Juranek, M. Goñi, G. Turi, J. Needoba, E. Mayorga, **Z. Lachkar**, N. Gruber, J. Hartmann, N. Moosdorf, R. Feely, F. Chavez :"Coastal Carbon Synthesis for the Continental Shelf of the North American Pacific Coast (NAPC): Preliminary Results", Ocean Carbon and Biogeochemistry News, vol 5, N1, 2012.

- **Z. Lachkar** and N. Gruber: "Biological Production Response to Coastal Upwelling Intensification: Insights from a Comparative Modeling Study", IMBER Update Issue 16 , 2010.

- Hauri, C., N. Gruber, **Z. Lachkar**, and G. K. Plattner, "Accelerated acidification in eastern boundary current systems", *Geochim. Cosmochim. Acta*, 73(13), A503–A503, 2009.

- **Z. Lachkar**, "Rôle des tourbillons de méso-échelle océaniques dans les flux air-mer de CO2 anthropique à l'échelle globale", Thèse de l'université Paris 6 Pierre et Marie-Curie, 2007.

- J.-M. Molines, A.M. Treguier, B. Barnier, L. Brodeau, J. Le Sommer, G. Madec, T. Penduff, S. Theetten, Y. Drillet, C. Talandier, J. Orr, and **Z. Lachkar,** "Le modèle DRAKKAR de la variabilité océanique globale, 1958-2004", IDRIS Newsletter, 2006.

- **Z. Lachkar**, "Classification des évènements El Nino par des méthodes neuronales", Mémoire d'Ingénieur, Ecole Nationale de la Météorologie et Université Paul Sabatier - Toulouse III, 2002.

International Conferences

- **Z. Lachkar**: "Physical-biogeochemical coupling in the Indian Ocean: examples of recent advances and gaps in understanding", Keynote talk, SOLAS Open Science Meeting, Cape Town, South Africa, Sep 2022.

- **Z. Lachkar**, Mehari, M., Al Azhar, M., Lévy, M.: "The Arabian Sea Oxygen Minimum Zone: Variability, Recent Trends, and Vulnerability to Future Climate Change" Liege Ocean Colloquium, Liege, May 2022.

- **Z. Lachkar**, Mehari, M., Levy, M., Paparella, F., and Burt, J., "Recent expansion of hypoxia in the Arabian Gulf and its drivers", oral talk at the Climate Change Research Network Conference, MENA Climate Week, Dubai, March 2022.

- **Z. Lachkar**, Mehari, M., Al Azhar, M., Lévy, M., and Smith, S.: "Fast local warming is the main driver of recent deoxygenation in the northern Arabian Sea", oral talk at the Indian Ocean Conference, Goa, March 2022.

- **Z. lachkar,** The Arabian Sea oxygen minimum zone: recent trends and vulnerability to climate change, keynote lecture, KAUST Ocean Carbon and Biogeochemistry in Tropical Seas Conference, April 2021, KSA

- **Z. Lachkar**, M. Mehari, M. Azhar, M., Levy, S. Smith, "Regional ocean deoxygenation in the Indian Ocean", ASLO Ocean Sciences meeting 2020, San Diego, Ca., USA.

- **Z. Lachkar**, M. Levy, S. Smith, "Ocean deoxygenation in the Arabian Sea, quantifying the recent trends and exploring their drivers", EGU General Assembly 2019, Apr 2019, Vienna, Austria.

- **Z. Lachkar**, M. Levy, S. Smith, "Strong intensification of the Arabian Sea oxygen minimum zone in response to Arabian Gulf warming", Ocean Deoxygenation Conference, Sep 2018, Kiel, Germany.

- **Z. Lachkar**, "Dynamics of Oxygen Minimum Zones: Role of Downward Fluxes of Organic Matter", GRC conference on ocean biogeochemistry, Jul 2018, Hong Kong.

- **Z. Lachkar**, S. Smith, M. Levy, "Intensification of the Arabian Sea oxygen minimum zone driven by warming of the Red Sea and the Arabian Gulf", EGU General Assembly 2018, Apr 2018, Vienna, Austria.

- **Z. Lachkar**, M. Levy, S. Smith, "Intensification and deepening of the Arabian Sea Oxygen Minimum Zone in response to increase in Indian monsoon wind intensity", EGU General Assembly 2017, Apr 2017, Vienna, Austria.

- **Z. Lachkar**, S. Smith, M. Levy, "Effects of mesoscale eddies on the dynamics of the Arabian Sea oxygen minimum zone", GRC conference on ocean biogeochemistry, Jun 2016, Hong Kong.

- **Z. Lachkar**, S. Smith, M. Levy, O. Pauluis, “Effects of mesoscale eddies on suboxia and hypoxia in the Arabian Sea”, Ocean Sciences Meeting, Feb 2016, New Orleans, USA.

- **Z. Lachkar**, S. Smith, M. Levy, O. Pauluis, “Eddies deepen suboxia and reduce denitrification in the Arabian Sea”, Indian Ocean Symposium, Dec 2015, Goa, India.

- **Z. Lachkar**, “Exploring the dynamics of the Arabian Sea oxygen minimum zone in O2 coordinates ”, Workshop on thermodynamic analysis for atmospheric and oceanic flows, Jan. 2016, Abu Dhabi, UAE.

- **Z. Lachkar**, “Introduction to marine bioegeochemical modeling”, Feb. 2015, NIO winter school, Goa, India.

- **Z. Lachkar**, “Effects of Climate Forcing on Ocean Acidification and De-oxygenation in Eastern Boundary Upwelling Systems: Insights from Regional Eddy-Resolving Simulations”, Seminar at Princeton University, Sep. 2014, USA.

- **Z. Lachkar**, “The evolution of multiple stressors in the Canary upwelling system over the 21st century”, IMBER Future Oceans Conference, Jun. 2014, Bergen, Norway.

- **Z. Lachkar**, “Eastern Boundary upwelling systems (EBUS) as natural SOLAS laboratories”, Keynote talk at the 46th International Liège Colloquium on Ocean Dynamics, May 2014, Liège, Belgium.

- **Z. Lachkar**, “Cross shelf exchange of carbon, nitrogen and oxygen in Eastern Boundary Upwelling Systems”, Gordon Research Conference on coastal ocean circulation, Jun. 2013, Biddeford, ME, USA.

- **Z. Lachkar** and N. Gruber, “Modeling multiple stressors in eastern boundary upwelling systems”, IMBIZO-3 meeting, 30 January 2013, Goa, India.

- **Z. Lachkar** and N. Gruber, “The future evolution of multiple stressors in eastern boundary upwelling systems”, SOLAS MTS Workshop, 27 November 2012, Lima, Peru.

- **Z. Lachkar**, “How do ocean mesoscale eddies affect biogeochemical processes? Insights from model simulations and satellite observations”, SOLAS MTS Workshop, 28 November 2012, Lima, Peru.

- **Z. Lachkar** and N. Gruber, “The future coastal ocean: the impact of increased stratification on biological production and carbon cycling”, EGU General Assembly 2012, Vienna, Austria.

- **Z. Lachkar** and N. Gruber, “The future of coastal upwelling ecosystems: the impact of potential wind changes on ocean acidification and coastal hypoxia”, EGU General Assembly 2012,Vienna, Austria.

- **Z. Lachkar**, N. Gruber, and G. Turi: “The future of eastern boundary upwelling systems: potential changes and vulnerabilities”, ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, Feb. 2011.

- **Z. Lachkar** and N. Gruber “Biological production response to coastal upwelling intensification: insights from a comparative modeling study”, IMBER IMBIZO2 meeting, Crete, Greece, Oct. 2010.

- **Z. Lachkar**, N. Gruber and C. Hauri “Carbon and nutrient recycling in Eastern Boundary Upwelling Systems”, OSM, Portland, OR, USA, Feb. 2010.

- **Z. Lachkar**, N. Gruber and G. K. Plattner: “Modeling the coastal carbon cycle with an emphasis on Eastern Boundary Upwelling Systems”,Coastal Carbon Cyc. Workshop, Paris, France, Jun. 2009.

- **Z. Lachkar**, N. Gruber, G. –K. Plattner, and C. Hauri: “Coastal upwelling systems under changing climate and high CO2”, EGU General Assembly 2009, Vienna, Austria, Apr. 2009.

- **Z. Lachkar**, N. Gruber, G. –K. Plattner, and C. Hauri: “The future coastal ocean: the impact of acidification and wind changes on coastal productivity and carbon cycling”, ASLO Aq. Sc. Meeting, Nice, France, Jan. 2009.

- **Z. Lachkar**, N. Gruber, G. –K. Plattner, and F. Hartmut:” Can eddies alter the response of productivity in EBCs to increases in upwelling favorable winds?”, 2008 ROMS European workshop, Grenoble, France, Oct. 2008.

- **Z. Lachkar**, N. Gruber, G. K. Plattner, and D. Loher: « Biological productivity in Eastern Boundary Current systems: a comparative study », Eastern Boundary Upwelling Ecosystems Symposium, Gran Canaria, Jun. 2008.

- **Z. Lachkar**, N. Gruber, G. K. Plattner, and D. Loher: « What controls biological productivity in Eastern Boundary Current systems?», Ocean Sciences Meeting 2008, Orlando, Florida, Mar. 2008.

- **Z. Lachkar**, N. Gruber, G. –K. Plattner, and D. Loher : ”Coastal biogeochemical processes and ocean carbon cycling in Eastern Boundary Current systems”, EURO-OCEAN 2007 Upwelling Systems Workshop, Santiago de Compostella, Spain, Oct. 2007.

- **Z. Lachkar**, N. Gruber, G. –K. Plattner, and F. Hartmut: ”Biological productivity in Eastern Boundary Current systems: the Canary vs the California Current system”, 2007 ROMS/TOMS users workshop, UCLA, Los Angeles, Oct. 2007.

- **Z. Lachkar**, J.C. Orr, J.C. Dutay, and P. Delecluse: ”Antarctic Intermediate Water Formation and Anthropogenic CO2 Uptake”, EGU General Assembly, Vienna, Austria, Apr. 2007

- **Z. Lachkar**, J.C. Orr, J.C. Dutay, and P. Delecluse: ”Role of mesoscale eddies in ocean global distributions of CFC-11,C14, and CO2”, Seminar at IFM-GEOMAR, Kiel, Germany, Sept. 2006

- **Z. Lachkar**, J.C. Orr, J.C. Dutay, and P. Delecluse: ”High resolution modelling of marine carbon cycle”, Seminar at the Swiss Federal Institute of Technology, Zurich, Switzerland, Aug. 2006

- **Z. Lachkar**, J.C. Orr, J.C. Dutay, and P. Delecluse: ”Effect of ocean mesoscale eddies on global distributions of CFC-11, C-14, and CO2”, EGU General Assembly, Vienna, Austria, Apr. 2006

- **Z. Lachkar**, J.C. Orr, J.C. Dutay, and P. Delecluse: “Role of Ocean Mesoscale Eddies in Global-scale Uptake, Storage, and Meridional Transport of CFC-11, Bomb-C14, and Anthropogenic CO2”, AGU Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006

- **Z. Lachkar**, J.C. Orr, J.C.: “Importance of eddies in absorption and transport of CFC-11 & C-14”, 3 rd DRAKKAR meeting, Grenoble, France, Jan. 2006

- **Z. Lachkar**, J.C. Orr, J.C.: “Tracers in OPA9 model”, DRAKKAR meeting, Grenoble, France, 2005

- **Z. Lachkar**, J.C. Orr, J.-C. Dutay: “CFC-11 simulations in the global model ORCA05: preliminary results”, DRAKKAR meeting, Kiel, Germany, Sept. 2004

- **Z. Lachkar**, S. Thiria, J.-P. Boulanger, and C. Menkes: “Classifying El Nino and La Nina events using the Kohonen maps”, AMS 3rd Conference on Artificial Intelligence Applications to the Environmental Sciences, February, Long Beach, CA, Feb. 2003.

Other Skills & Competencies

Languages:	Arabic (mother tongue), English (fluent), French (fluent), German (basic)
Computer Science:	Matlab, Fortran 77/90, Python, Unix/Linux, Linux cluster, Ferret, R, Latex
Mathematical Modeling:	Numerical Modeling (e.g., ROMS, NEMO), Machine Learning (e.g., neural networks, self-organizing maps), Lagrangian Modeling, Dynamical Systems Theory