

# VINCENT COMBES

French, born June 30<sup>th</sup> 1982

## Ph.D. Georgia Institute of Technology (USA) - Engineer ENSEEIHT (Fr.) - Ocean Modeler -

| Adresses                               | Contact information  | Languages  |
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| ✓ USA: ...<br>CORVALLIS, OR 97333      | ✓ USA phone: +1 ...<br>✓ Email: ...@gmail.com<br>✓ Webpage: www.vincentcombes.com<br>✓ Work Skype: ... | ✓ <b>French</b> (mother tongue)<br>✓ <b>English</b> (fluent)<br>✓ <b>Spanish</b> (fluent)<br>✓ <b>German</b> (basic notions) |
| ✓ France: ...<br>06250 MOUGINS, FRANCE |  |  |

### FORMATION

- 08/2010 – Present **OREGON STATE UNIVERSITY** – College of Ocean and Atmospheric Sciences – Corvallis, OR USA,  
**Research Associate / Post-Doctorate** – *Physical Oceanography / Ocean Modeling*
- 08/2004 – 08/2010 **GEORGIA INSTITUTE OF TECHNOLOGY** – Earth & Atmospheric Sciences - Atlanta, GA USA,  
**Ph.D. Degree** – *Physical Oceanography*
- 01/2009 – 12/2009 **UNIVERSIDAD DE CONCEPCION** – Concepción, CHILE  
*Research Collaborations*
- 08/2004 – 08/2007 **GEORGIA INSTITUTE OF TECHNOLOGY** – Earth & Atmospheric Sciences - Atlanta, GA USA,  
**Master Degree** – *Atmospheric and Ocean Dynamics*
- 08/2002 – 06/2005 **ENSEEIHT** – Ecole National Supérieure d'Electrotechnology, d'Electronique, d'Informatique, d'Hydraulique et  
des Télécommunications - Toulouse, FRANCE  
**Engineering Degree (Master)** – *Specialized in Fluid Mechanics and Hydraulics*

### PROFESSIONAL EXPERIENCES (USA - Chile - Argentina - Colombia)

- 08/2004 – Present **RESEARCH EXPERIENCE IN PHYSICAL OCEANOGRAPHY - OCEAN MODELING**  
Specialized in the use of the Regional Ocean Modeling System (ROMS)
- Post Doctorate Advisors: Dr. Ricardo Matano and Dr. Ted Strub, Corvallis USA  
PhD Advisor: Dr. Emanuele Di Lorenzo, Atlanta USA  
Main Chilean Collaborators: Dr. Samuel Hormazabal, Dr. Carolina Parada  
Main Argentinean Collaborators: Dr. Elbio Palma, Dr. Alberto Piola  
Main US collaborators: Dr. Yvette Spitz, Dr. Dudley Chelton
- Research Interests:*
- Low frequency ocean variability (surface and subsurface currents)
  - Coastal upwelling variability
  - Eddy dynamics
  - Cross-shelf transport
  - Physical-biological Interaction (NEMURO\_Fe model)
  - Air-sea interaction
  - Satellite observations: Altimetry (AVISO), Sea surface salinity (Aquarius)

#### *Studied and Modeled Regions:*

- North Pacific: Gulf of Alaska, Oregon shelf, California Current System
- South Pacific: Peru-Chile Current system, Juan Fernandez Islands
- South Atlantic: Patagonian shelf, Brazil Current, Malvinas Current, South Georgia Island, Antarctic Circumpolar Current, Meridional Overturning Circulation, Agulhas Current and Benguela Current

#### **TEACHING EXPERIENCES**

*Medellin, COL.*

2 weeks class (2012): “The ROMS Ocean Model applied to the Colombian coast”, **taught in Spanish**

*Buenos Aires, ARG.*

2 weeks class (2011): “Ocean Circulation, Theory and Models”, **taught in Spanish**

*Atlanta, USA.*

5 years Teaching Assistant (2004-2008): “Introduction to oceanography” (several lectures + grading)

#### **CURRENT FUNDED PROJECTS**

Agency: NSF - Proposal Title: Natural Iron Fertilization from the Patagonian and South Georgia Island Shelves to the Open Waters of the Southern Ocean (\$753,084)

Agency: NASA - Proposal Title: The Effects of Eddy-Induced Ekman Pumping on Mesoscale and Large-Scale Ocean Circulation (\$1,108,544)

Agency: NASA - Proposal Title: South Atlantic Sea Surface Salinity Variability (\$851,792)

Agency: NASA - Proposal Title: Processes Connecting Coastal to Basin-Scale Ocean Circulation (\$1,030,211)

## **PUBLICATIONS**

### **Published book chapters**

[1] Contributor to chapter 14 of: “Ocean Circulation and Climate – A 21st Century Perspective”, Edited by G. Siedler, S.M. Griffies, J. Gould and J.A. Church. Published December 2013.

### **Published articles**

[16] Chenillat, F., P.J.S. Franks, **V. Combes** (2016): Biogeochemical Properties of Eddies in the California Current System. *Geophys. Res. Letters*, doi:10.1002/2016GL068945.

[15] Strub, P. T., C. James, **V. Combes**, R. P. Matano, A. R. Piola, E. D. Palma, M. Saraceno, R. A. Guerrero, H. Fenco, and L. A. R. Etcheverry (2015), Altimeter-derived seasonal circulation on the southwest Atlantic shelf: 278–438S, *J. Geophys. Res. Oceans*, 120.

[14] **Combes, V.**, S. Hormazabal, and E. Di Lorenzo (2015), Interannual variability of the subsurface eddy field in the Southeast Pacific, *J. Geophys. Res. Oceans*, 120.

[13] Guerrero, R. A., A. R. Piola, H. Fenco, R. P. Matano, **V. Combes**, Y. Chao, C. James, E. D. Palma, M. Saraceno, P. Ted Strub (2014): The salinity signature of the cross-shelf exchanges in the Southwestern Atlantic Ocean: Satellite observations, *Journal of Geophysical Research: Oceans*, 119.

[12] Matano, R. P., **V. Combes**, A. R. Piola, R. Guerrero, E. D. Palma, P. Ted Strub, C. James, H. Fenco, Y. Chao, M. Saraceno (2014): The salinity signature of the cross-shelf exchanges in the Southwestern Atlantic Ocean: Numerical simulations. *Journal of Geophysical Research: Oceans*, 119.

[11] **Combes, V.** and R.P. Matano (2014): Trends in the Brazil/Malvinas Confluence region. *Geophysical Research Letters*, 41.

[10] **Combes, V.** and R.P. Matano (2014): A two-way nested simulation of the oceanic circulation in the Southwestern Atlantic. *Journal of Geophysical Research: Oceans*. 119.

[9] Andrade, I., S. Hormazabal, **V. Combes** (2014): Intrathermocline eddies at the Juan Fernández Archipelago, southeastern Pacific Ocean. *Lat. Am. J. Aquat. Res.*, 42(4): 888-906.

[8] Di Lorenzo, E., **V. Combes**, J.E. Keister, T.P. Strub, A.C. Thomas, P.J.S. Franks, M.D. Ohman, J. Furtado, A. Bracco, S.J. Bograd, W.T. Peterson, F.B. Schwing, S. Chiba, B. Taguchi, S. Hormazabal, C. Parada (2013): Synthesis of Pacific Ocean climate and ecosystem dynamics. *Oceanography*, 26(4), 68-81.

[7] Hormazabal, S., **V. Combes**, C.E. Morales, M.A. Correa-Ramirez, E. Di Lorenzo, S. Nuñez (2013): Intrathermocline eddies in the Coastal Transition Zone off central Chile (31-41°S). *Journal of Geophysical Research: Oceans*, 118, 1–11.

[6] **Combes, V.**, F. Chenillat, E. Di Lorenzo, P. Rivière, M. D. Ohman and S. J. Bograd, (2013): Cross-shore transport variability in the California Current: Ekman upwelling vs. eddy dynamics. *Progress in Oceanography*, 109, 78-89.

- [5] Porobić, J., C. Parada, B. Ernst, S. Hormazábal, **V. Combes** (2012): Modeling the connectivity of Juan Fernández rock lobster (*Jasus frontalis*), subpopulations through a biophysical model. *Lat. Am. J. Aquat. Res.*, 40(3), 613-632.
- [4] Keister, J.E., E. Di Lorenzo, C. Morgan, **V. Combes**, W. Peterson, (2011): Zooplankton species composition is linked to ocean transport in the Northern California Current. *Global Change Biology*, 17.
- [3] **Combes, V.**, E. Di Lorenzo and Curchitser, E, (2009): Interannual and Decadal Variations in Cross-Shelf Transport in the Gulf of Alaska. *Journal of Physical Oceanography* 39(4), 1050-1059.
- [2] Capotondi, A., **Combes, V.**, Alexander, M. A., Di Lorenzo, E. and Miller, A. J., (2009): Low-frequency variability in the Gulf of Alaska from coarse and eddy-permitting ocean models. *Journal of Geophysical Research: Oceans*, 114
- [1] **Combes, V.**, E. Di Lorenzo, (2007): Intrinsic and forced interannual variability of the Gulf of Alaska mesoscale circulation. *Progress In Oceanography*, 75, 266-286

## CONFERENCES & WORKSHOPS

- Dec 2014 - Workshop on South Atlantic circulation variability and change: integrating models and observations, Buenos Aires, Argentina. Oral Presentation. "Trends in the Brazil/Malvinas Confluence region"
- Feb 2014 - Ocean Science Meeting, Honolulu. Poster. "A Two-Way Nested Simulation Of The Oceanic Circulation In The Southwestern Atlantic"
- Nov 2013 - Universidad Catolica de Valparaiso, Valparaiso, Chile. Oral Presentation in Spanish. "Interannual Variability of the Subsurface Eddy Field in the SouthEast Pacific"
- Oct 2013 - 3rd Congreso de Meteorología, Oceanografía y Clima del Pacifico Sur Oriental, Santiago, Chile. Oral Presentation in Spanish. "Intrathermocline Eddies in the Coastal Transition Zone off central Chile (31°S-41°S)"
- Dec 2012 - American Geophysical Union, San Francisco. Poster. "Modeling the Patagonian ShelfBreak Upwelling"
- Apr 2012 - Invited at the Universidad Nacional de Medellin, Colombia. Oral Presentation in Spanish. "The ROMS 2 ways nesting capability applied in real cases ocean circulation"
- Feb 2012 - Ocean Science Meeting, Salt Lake City. Poster. "Mean and seasonal transport variability in the Southwest Atlantic"
- Dec 2011 - Invited at the Universidad de Buenos Aires, Argentina. Oral Presentation in Spanish. "Mean and Seasonal Transport Variability in the Southwest Atlantic, derived from a two-way nesting Experiment"
- Oct 2010 - Altimetry for oceans and hydrology and 4<sup>th</sup> Coastal Altimetry Workshop - Lisbon and Porto, Portugal. Poster. "Upwelling and cross-shelf transport dynamics along the Pacific Eastern boundary"
- Oct 2010 - Physical Oceanography Dissertations Symposium - PODS VI, Hawaii. Oral Presentation. "Upwelling and cross-shelf transport dynamics along the Pacific Eastern boundary"
- Nov 2009 - Taller de analisis del estado del conocimiento y perspectivas de investigación del sistema de la surgencia costera de la Guajira, Cartagena Colombia. Oral Presentation in Spanish. "Variabilidad del sistema de surgencia de La Guajira, estimado por un trazador pasivo"
- Oct 2009 - PICES Annual Meeting, Jeju, South Korea. Oral Presentation. "Interannual and Decadal Variations in Cross-Shelf Transport in the Gulf of Alaska"
- Sep 2009 - Primer Congreso de Oceanografía Física Meteorología y Clima: Concepcion Chile. Oral Presentation in Spanish. "Variabilidad interanual y decadal de surgencia en el Sistema de Corriente de Humboldt, estimado por un trazador pasivo"
- Nov 2006 - ROMS workshop, Madrid. Oral Presentation. "Forced and Intrinsic Interannual Variability in the surface ocean circulation of the Gulf of Alaska"
- Oct 2006 - Conference EPOC, Oregon. Poster. "Forced and Intrinsic Interannual Variability in the Gulf of Alaska"
- Feb 2006 - Ocean Sciences Meeting, Hawaii. Poster. "Role of Eddies in the Upper Ocean"
- AMS (American Meteorological Society): San Diego (2005), Atlanta (2006)

## AWARDS

Research Excellence Award for the School of Earth and Atmospheric, Georgia Institute of Technology, year 2009

Best Poster Award for the 2008 Graduate Students Symposium for the School of Earth and Atmospheric, Georgia Institute of Technology  
Best Poster Award for the College of Sciences for the Georgia Institute of Technology, Graduate Students Symposium year 2008

## OTHERS/SKILLS

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Reviewer for Ocean Modelling, Journal of Geophysical Research: Ocean, Fisheries Oceanography

Informatics skills: Matlab, Fortran, Unix, Adobe illustrator, Adobe Photoshop, Corel Draw, Office, use of super computers

Spare time: Skiing, Rock climbing, Volleyball, Tennis, Salsa dancing and Traveling

Languages: Fluent in French, English and Spanish

Personal webpage: [www.vincentcombes.com](http://www.vincentcombes.com)

## REFERENCES

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|---------------------|---|--|
| Ricardo Matano      | CEOAS, Oregonstate University, USA        | <a href="mailto:rmatano@coas.oregonstate.edu">rmatano@coas.oregonstate.edu</a> |
| Ted Strub           | CEOAS, Oregonstate University, USA        | <a href="mailto:strub@coas.oregonstate.edu">strub@coas.oregonstate.edu</a>     |
| Emanuele Di Lorenzo | EAS, Georgia Institute of Technology, USA | <a href="mailto:edl@eas.gatech.edu">edl@eas.gatech.edu</a>                     |
| Samuel Hormazabal   | Pont. Univ. Católica de Valparaíso, CHILE | <a href="mailto:sam.hormazabal@gmail.com">sam.hormazabal@gmail.com</a>         |
| Yuley Cardona       | Univ. Nacional de Colombia, COLOMBIA      | <a href="mailto:ymcardon@unal.edu.co">ymcardon@unal.edu.co</a>                 |