

Daniel Isaias GRADOS PAREDES

Numerical ecologist

Peruvian, 39 years old

E-mail : danny.grados@gmail.com

Tel. (mobile in Peru) : +51 922312395

Santa Cruz Avenue, 1320, apt 402, Miraflores
PERU



RESEARCH INTEREST

- I am PhD in Marine biology with strong interest in the use and development of statistical methods for ecological and environmental applications. I have experience in acoustic processes. I have worked with multi-frequency acoustic data from fisheries, fish and oceanographic data from the Humboldt Current System. I have worked in collaboration with statisticians, ecologist, biologist, oceanographers and expert in signal processing. I believe multi-disciplinary work is necessary for increasing our understanding of ecosystems. Particular interest include: Submeso and mesoscale dynamics, Spatial statistics, spatio-temporal modelling, multivariate analysis, hierarchical modelling, signal modelling, ecosystem approach, weather modelling, and other ecological, climate and environmental applications involving statistical methods.

ACADEMICAL TRAINING

- 2012 – 2014** – **PhD in "Marine Biology"**, Institut de Recherche pour le Développement (IRD) - Doctoral school in Sciences of the sea - Université de Bretagne Occidentale, France. Subject: "Multiscale statistical characterization and modelling of the submesoscale-to-mesoscale dynamics of ecosystem components in the northern Humboldt Current system". Advisors: Ronan Fablet (TELECOM-Bretagne, France) and Arnaud Bertrand (IRD, France).
- 2010 – 2011** – **Master in "Statistics and agronomic experiments"**, Escola Superior de Agricultura Luiz de Queiroz, University of Sao Paulo, Brazil.
- 2002 – 2007** – **Engineer in Statistics**, Universidad Nacional de Ingeniería (UNI), Peru.

Experiencia profesional

- Mayo. 2017** – Acoustic Researcher at the Instituto del Mar del Perú.
- al presente**
- Feb. 2017 al presente** – Teacher of statistical program in the Master Program at the Cayetano Heredia University, Lima - Peru.
- Abr. 2016 a mar. 2017** – Posdoctorant in the ABRACOS project (Acoustic along the BRAZilian Coast) at the Pernambuco Federal University. <https://www.google.com/>
- Oct. 2015 a Jul. 2016** – Consultant of the IMARPE-BID. Consultant to build climate change scenarios of the oceanographic conditions in the Humboldt Current System.
- Nov. 2011 a Oct. 2014** – Statistical analysis in the scales characterization of the biological and physical components of the Humboldt Current System.

PUBLICATIONS

- Ortiz-Alvarez C., Pajuelo M., **Grados D.**, Abrego M., Barragán-Rocha A., Barantes M., Sánchez A., Fonseca L., Gadea V., Mangel J., Rguez-Baron J., Santidrian-Tomillo P., Sarti L., Santana-Hernández H., Shillinger G., Prado M., Wallace B., Williard A., Zavala-Norzagaray A., Alfaro-Shigueto J. 2020. Rapid Assessments of Leatherback Small-Scale Fishery Bycatch in Interesting Areas in the Eastern Pacific Ocean. *Frontiers in Marine Science*, doi: 10.3389/fmars.2019.00813.
- Torrejón-Magallanes J., **Grados D.**, Lau-Medrano W. 2019. Spatio-temporal distribution modeling of dolphinfish (*Coryphaena hippurus*) in the Pacific Ocean off Peru using artisanal longline fishery data. *Deep Sea Research Part II*, doi: 10.1016/j.dsr2.2019.104665.
- Arones-Flores K., **Grados D.**, Ayón P., Bertrand A. and Bertrand, A. 2019. Spatio-temporal trends in zooplankton biomass in the northern Humboldt current system off Peru from 1961-2012. *Deep Sea Research Part II*, doi: 10.1016/j.dsr2.2019.104656.
- Salvatelli, R., Field, D., Gutierrez, D., Baumgartner, T., Ferreira, V., Ortlieb, L., Sifeddine, A., **Grados, D.** and Bertrand, A. 2017. Multifarious anchovy and sardine regimes in the Humboldt Current System during the last 150 years. *Global Change Biology*, doi: 10.1111/gcb.13991.
- **Grados, D.**, Bertrand, A., Colas, F., Echevin, V., Chaigneau, A., Gutierrez, D., Vargas, G. and Fablet, R. 2016. Spatial and seasonal patterns of fine-scale to mesoscale upper ocean dynamics in an eastern Boundary Current system. *Progress in Oceanography*, 142: 105 - 116.
- Joo, R., **Grados, D.**, Bouchón, M. and Diaz, E. 2016. Tamanõ óptimo de muestra del programa de observadores a bordo de la flota dirigida a la explotación de la anchoveta peruana (*Engraulis ringens*). *Revista Peruana de Biología*, 23: 169.
- Lezama-Ochoa, A., **Grados, D.**, Lebourges-Dhaussy, A., Irigoien, X., Chaigneau, A., and Bertrand, A. 2015. Biological characteristics of the hydrological landscapes in the Bay of Biscay in spring 2009. *Fisheries Oceanography*, 24: 26-41. doi: 10.1111/fog.12090.
- Bertrand, A., **Grados, D.**, Ballón, M., Bez, N., Castillo, R., Lezama-Ochoa, A. and Fablet, R. 2014. Broad impacts of fine-scale dynamics on seascape structure from zooplankton to seabirds. *Nature communications*, 5, 5239. doi: 10.1038/ncomms6239.
- **Grados, D.**, Fablet, R., Ballón, M., Bez, N., Castillo, R., Lezama-Ochoa, A. and Bertrand, A. 2012. Multiscale characterization of spatial relationships between oxycline depth, macrozooplankton and forage fish off Peru using geostatistics, PCNMs and wavelets. *Canadian Journal Fisheries and Aquatic Sciences*: 69: 740-754. doi: 10.1139/F2012-017.
- Ballón, M., Bertrand, A., Lebourges-Dhaussy, A., Gutiérrez, M., Ayón, P., **Grados, D.** and Gerlotto, F. 2011. Is there enough zooplankton to feed forage fish population off Peru? An acoustic (positive) answer. *Progress in Oceanography*: 91:360-381. doi:10.1371/journal.pone.0010330.

PUBLICATIONS (continued)

- Lezama-Ochoa, A., Ballón, M., Woillez, M., **Grados, D.**, Irigoien, X. and Bertrand, A. 2011. Spatial patterns and scale-dependent relationships between macro-zooplankton and fish in the Bay of Biscay: an acoustic study. *Marine Ecology Progress Series*: 439:151-168. doi: 10.3354/meps09318.

COMUNICACIONES IN CONFERENCES

- Galloso, P., **Grados, D.**, Arguelles, J., Pennino, M-G., Bez, N. and Bertrand, A. A comparison of sampling designs for marine scallops (*Argopecten purpuratus*) assessment during El Niño events. Oral communication at the XVII Congreso Latinoamericano de Ciencias del Mar - XVII COLACMAR. Sta. Catarina, Brazil. 13-17/11/2017.
- Galloso, P., **Grados, D.**, Bez, N., Pennino, M-G., Bertrand, A. A spatial zero-inflated model with INLA: an application to estimate scallops biomass. Oral communication at the V bayesian congress of latin america - COBAL. Guanajuato, Mexico. 7-9/06/2017.
- **Grados, D.**, Fablet, R., Colas, F, Chaigneau, A., Echevin, V, Vargas, G., and Bertrand, A. Impact of ocean stratification on small-scale physical oases for pelagic life. Oral communication at the PICES Symposium. Victoria, Canada. 6-10/03/2017.
- **Grados, D.**, Bertrand, A., Vargas, G., Colas, F., Capet, X., Echevin, V., Chaigneau, A. and Fablet, R. Acoustic to quantify the impact of physical structures on biological components along scales. Oral communication at the ICES Symposium Marine Ecosystem Acoustics - Observing the Ocean Interior in Support of Integrated Management. Nantes, France. 25-28/05/2015.
- **Grados, D.**, Bertrand A., Colas, F., Bertrand, S., Capet, X., Chaigneau, A., Vargas, G., Mousseigne, A., and Fablet, R. Fine-scale dynamics shape the seascape from zooplankton to seabirds. Oral communication at the International Council for the Exploration of the Sea (ICES) annual science conference 2014. La Coruña, Spain. 15-19/09/2014.
- Flores, K., Ayon P., **Grados, D.** and Bertrand A. Estimación de biomasa de Meso-zooplankton en el norte de la Corriente de Humboldt frente a Perú. Oral communication at the CONCIMAR meeting 2014. Lima, Peru. 16-19/04/2013.
- Bertrand, A., **Grados, D.**, Colas, F., Chaigneau, A., Castillo, R. and Fablet, R. Acoustics show how high frequency physical features structure the ocean scape and shape the distribution of zooplankton and fish. Oral communication at the ICES-Working Group on Fisheries Acoustics Science and Technology annual meeting 2013. San Sebastian, Spain. 16-19/04/2013.
- Bertrand, A., Castillo, R., Chaigneau, A., Lebourges-Dhaussy, A., Fablet, R., **Grados, D.**, Gutiérrez, M., Habasque, J., Quiroz, Z., Roudaut, G., and Vargas, G. Ocean Acoustics for Biology: Mixed layer submesoscale variability and its impact on organism spatial patterns. Oral communication at the International workshop on the diagnosis of vertical exchanges at submesoscale and their impact on ecosystems, from integrated satellite and in-situ observations. Brest, France, November 28 - 29, 2012

COMUNICATIONS IN CONFERENCES (continued)

- **Grados, D.**, Fablet, R., Ballon, M., Castillo, R., Quiroz, Z., Roudaut, G., Vargas, G. and Bertrand, A. Acoustic-based characterization of the multiscale dynamics of ecosystem components in the northern Humboldt Current system. Oral communication at the ICES-Working Group on Fisheries Acoustics Science and Technology annual meeting 2012. Ifremer. Brest. France.
- Bertrand, A., Ballón, M., Chaigneau, A., Fablet, R., Graco, M., **Grados, D.**, Monetti, F. and Paulmier, A. Towards new tools for OMZs and hypoxia detection (acoustical approach). Oral communication at the Eur-Ocean conference on ocean desoxygenation. Toulouse, France, October 24 - 26, 2011
- Lezama-Ochoa, A., Ballón, M., **Grados, D.**, Boyra, G., Martinez, U. and Bertrand, A. Ecosystem approach of the Bay of Biscay pelagic ecosystem, by the simultaneous acoustical characterization of the main communities. Oral communication at the ICES-Working Group on Fisheries Acoustics Science and Technology annual meeting 2010. Washintong University. San Diego. EEUU.
- **Grados, D.**, Ballón, M. and Bertrand, A. Identifying of structures and spatial relationship between components of Current Humboldt system. II Congress of sciences sea of Peru. Piura, Peru, from 24 to 28 of may, 2010.
- **Grados, D.** Geostatistics. Oral communication. Statistics day of the National University of Engineering. Lima, Peru, December 5, 2008.

TEACHING

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| Jan - Feb 2018 | – Teacher of the course "Time Series Analysis" in the master in Sciences of the Sea at the Universidad Peruana Cayetano Heredia (UPCH), Lima, Peru. |
| Oct - Dic 2017 | – Teacher of the course "statistics" in the master in Sciences of the Sea of the Universidad Peruana Cayetano Heredia (UPCH), Lima, Peru. |
| Oct - Dic 2015 | – Teacher of the course "Prediction methods: Regression and time series" at the Pontificia Universidad Catolica del Perú (PUCP), Lima, Peru. |
| Nov. 2015 | – Teacher of the course "Time series analysis with R" at the Institut of the Sea of Peru (IMARPE), Lima, Peru. |
| Oct - Dic 2015 | – Teacher of the course "Geostatistical analysis" at the Universidad Peruana Cayetano Heredia (UPCH), Lima, Peru. |
| Aug. 2015 (13 hours) | – Teacher of the course "Introduction to the Geostatistics with R" at the Pontificia Universidad Catolica del Perú (PUCP), Lima, Peru. |
| Aug. 2015 (35 hours) | – Teacher of the course "Aplicación de la Geoestadística en la evaluación de invertebrados marinos" at the Institut of the sea of Peru (IMARPE), Lima, Peru. |
| Aug. 2015 (13 hours) | – Teacher of the course "Introduction to programming in R" at the Pontificia Universidad Catolica del Perú (PUCP), Lima, Peru. |
| Apr. 2015 (24 hours) | – Teacher of the course "Introduction to Geostatistics" at the Institut of the sea of Peru (IMARPE), Peru. |

TEACHING (continued)

Apr. 2013 (40 hours) – **Teaching Assistant** of the course "Geostatistics" workshop at Institut of the sea of Peru (IMARPE), Peru.

Jul. 2011 (35 hours) – **Teacher** in an "Introduction to Programming in R" workshop at IMARPE, Peru.

Oct. – Dec. 2007 (32 hours) – **Teaching Assistant** of the course "Statistical Quality Control I" at the National University of Engineering, Lima, Peru, for third-year undergraduate students in statistics.

LINGUISTIC AND COMPUTER SKILLS

Spanish – Native

English – read, written, spoken

French – read, understood

Portuguese – read, written, spoken

Quechua – read, spoken

Computer skills – **Software/languages** Matlab, R, SPSS, Minitab, Eviews, SAS, C/C++, BASH. **OS:** Linux, Windows. **Misc:** Latex, Office, OpenOffice, End Note, Mendeley.

PERSONAL REFERENCES

– **Dr. Arnaud Bertrand.** Fisheries Ecologist; Institut de Recherche pour le Développement (IRD). UMR MARBEC. Universidad Federal de Pernambuco, Recife, Brazil Tel: (+55) 81 999 992 853 E-Mail: arnaud.bertrand@ird.fr

– **Dr. Alex Costa da Silva.** Oceanographer. Professor at the Federal University of Pernambuco. Sub-director of oceanographic department. Recife, Pernambuco - Brazil. E-Mail: alexsilvaufpe@gmail.com

– **Dr. Ronan Fablet.** Professor. Institut Telecom/ Telecom Bretagne, CNRS UMR 6285 LabSTICC, Technopôle Brest-Iroise, CS 83818, 29283 Brest Cedex, France. Telephone number (+33) 2 29 00 12 87. Fax: (+33) 2 29 00 10 12. E-Mail: ronan.fablet@telecom-bretagne.eu