

SUMMARY CURRICULUM VITAE

Andrea D'Alpaos

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EDUCATION

2005: PhD, Hydrodynamics and Environmental Modelling, University of Padova. Thesis: “*Morphodynamics of tidal environments*” (advisors: A. Rinaldo, S. Lanzoni, M. Marani).

2003 – 2004: Research Fellow, School of Computational Science and Department of Geological Sciences, Florida State University, FL (USA) --June 2003-March 2004

2001: BS+MS, Civil Engineering (Hydraulics), 110/110 Summa cum Laude and mention of merit for curriculum studiorum), University of Padova (Italy).

EMPLOYMENT

From Dec 2020: Full Professor, Department of Geosciences, University of Padova.

2014 - 2020: Associate Professor, Department of Geosciences, University of Padova.

2008 – 2014: Assistant Professor, Department of Geosciences, University of Padova.

2005-2007: Postdoctoral Research Associate, University of Padova.

ACADEMIC AWARDS and RECOGNITION

2018: Brunings Lecture: “Morphodynamics of tidal meanders and related sedimentary products: field observations and mathematical modelling”, Utrecht University, January 2018, <https://bruningslecture.nl/2018-2/>.

2017: National Academic Qualification as Full Professor.

2013: National Academic Qualification as Associate Professor.

2004: Outstanding Student Paper Award, AGU Fall meeting.

2003: *Prof. Aldo Gini Fellowship* for studies and research abroad, *Gini Foundation*, Padova, Italy, 2003-2004.

2001: *Cum Laude* distinction and *Mention of Merit for curriculum studiorum*, University of Padova, Italy, 2001.

RESEARCH ACTIVITY

D'Alpaos' research activity focuses on the biomorphodynamic evolution of coastal and terrestrial landscapes accounting for the effects of the mutual interactions and adjustments between physical and biological processes. His research on the biomorphodynamic evolution of coastal and terrestrial landscapes includes understanding, through field observations, laboratory experiments, and modeling, how biogeomorphic feedbacks contribute to shaping these landscapes and how they drive system response to changes in the environmental forcing and human interferences. In the last five years, he has also started to look at earth landscapes from a different perspective, thanks to the collaboration with colleagues in Sedimentology and Geophysics. This new view allowed him to unravel the signatures of the current biogeomorphic processes in the stratal architecture of earth landscapes. In the last years D'Alpaos has been listed in the top 2% among the most influential scientists globally, out of a total of more 9 millions, according to a Stanford global peer-reviewed study.

SCIENTIFIC ACTIVITY

Author of more than 110 papers published or in press on peer-reviewed international journals; 7 peer-reviewed book chapters; more than 80 papers published on the proceedings of International and Italian Conferences (Bibliometric indices: 5159 total citations by 2278 documents, H-index 36 –source Scopus).

Representative Publications

- Tognin, D., A. Finotello, **A. D'Alpaos**, D.P. Viero, M. Pivato, R.A. Mel, E. Bertuzzo, M. Marani, L. Carniello (2022), Loss of geomorphic diversity in shallow tidal embayments promoted by storm-surge barriers, *Science Advances*, 8(13), 8446, <https://doi.org/10.1126/sciadv.abm8446>

- Tognin, D., **A. D'Alpaos**, M. Marani, L. Carniello (2021), Marsh resilience to sea-level rise reduced by storm-surge barriers in the Venice Lagoon, *Nature Geosciences*, <https://doi.org/10.1038/s41561-021-00853>
- Geng, L., **D'Alpaos, A.**, Sgarabotto, A., Gong, Z., & Lanzoni, S. (2021). Intertwined eco-morphodynamic evolution of salt marshes and emerging tidal channel networks. *Water Resources Research*, 57, e2021WR030840. <https://doi.org/10.1029/2021WR030840>.
- Sgarabotto, A., **D'Alpaos, A.**, & Lanzoni, S. (2021). Effects of vegetation, sediment supply and sea level rise on the morphodynamic evolution of tidal channels, *Water Resources Research*, 57, e2020WR028577, <https://doi.org/10.1029/2020WR028577>.
- Finotello, A., **D'Alpaos, A.**, Bogoni, M., Ghinassi, M., & Lanzoni, S. (2020). Remotely-sensed planform morphologies reveal fluvial and tidal nature of meandering channels, *Scientific Reports*, 10(1) doi:10.1038/s41598-019-56992-w
- Finotello A., S. Lanzoni, M. Ghinassi, M. Marani, A. Rinaldo, **A. D'Alpaos** (2018), Field migration rates of tidal meanders recapitulate fluvial morphodynamics, *Proceedings of the National Academy of Sciences of the United States of America*, 115(7), 1463-1468.
- Ganju N.K., Z. Defne, M.L. Kirwan, S. Fagherazzi, **A. D'Alpaos**, L. Carniello (2017), Spatially integrative metrics reveal hidden vulnerability of microtidal salt marshes, *Nature Communications*, 8, 14156.
- **D'Alpaos A.** and M. Marani (2016), Reading the signatures of biologic–geomorphic feedbacks in salt-marsh landscapes, *Advances in Water Resources*, 93, 265-275, <http://dx.doi.org/10.1016/j.advwatres.2015.09.004>.
- Marani M., C. Da Lio, and **A. D'Alpaos** (2013), Vegetation engineers marsh morphology through multiple competing stable states, *Proceedings of the National Academy of Sciences of the United States of America*, 110(9), 3259-3263.
- Kirwan M., G.R. Guntenspergen, **A. D'Alpaos**, J.T. Morris, S.M. Mudd, and S. Temmermann (2010), Limits on the adaptability of coastal marshes to rising sea level, *Geophysical Research Letters*, 37, L23401.
- **D'Alpaos A.**, S. Lanzoni, M. Marani, and A. Rinaldo (2007), Landscape evolution in tidal embayments: modelling the interplay of erosion, sedimentation, and vegetation dynamics, *JGR- Earth Surface*, 112, F01008.

RECENT INVITED LECTURES and TALKS (excerpta)

- Invited talk: “Rising water levels, increasing human pressure, and the future of the Venice Lagoon”, International Conference Water Futures, University of Padova, Italy, June 2019.
- Invited talk: “Origins and evolution of the Lagoon system”, Envisioning a future for Venice, Seminar for BNP Paribas, San Clemente, Venice, November 2018.
- Invited talk: “Biogeomorphic patterns in tidal systems and response to climate change: Field observations and modelling”, Ecological society of America (ESA), New Orleans, August 2018.
- Brunings Lecture: “Morphodynamics of tidal meanders and related sedimentary products: field observations and mathematical modelling”, Utrecht University, 16 January 2018.
- Invited talk: “Modelling tidal meander morphodynamics”, ICFS2011 Calgary, Canada, July, 2017.
- Keynote Lecture: “Signatures of biologic-geomorphic feedbacks in tidal environments”, SKLEC Workshop: Biogeomorphology and pattern formation on estuaries and coastal ecosystems, East China Normal University, Shanghai, China, June 27-30, 2016.
- “Signatures of Biogeomorphic feedbacks in Salt-Marsh Systems”, Estuary Day Workshop: Morphodynamic equilibrium in tidal environments, Nanjing, China, 13-15 October, 2015.
- “Wind-wave induced erosion processes and the fate of the Venice Lagoon”, University of Antwerpen, 2014.
- “On the role of eco-geomorphic feedbacks in shaping salt marsh systems”, AGU Chapman Conference on Hydrogeomorphic Feedbacks and Sea Level Rise in Tidal Freshwater River Ecosystems, VA (USA), 2012.

RESEARCH GRANTS

- PI: “Analysis of the stability of fluvial levees through mathematical modelling and non-invasive geophysical investigations”, University of Padova, 2008-2011, 52 k€;
- PI: “Reading signatures of the past to predict the future: 1000 years of stratigraphic record as a key for the future of the Venice Lagoon”, Fondazione Cassa di Risparmio di Padova e Rovigo, 2012-2015, 150 k€;
- PI: “Tidal vs. tidally-influenced fluvial point bars: facies distribution and implications for reservoirs production development”, Shell International Exploration and Production, 2013-2016, 135.2 k€.
- PI: Research Line 3.2 “Dinamiche erosive e morfosedimentarie in Laguna di Venezia” within the project “Venezia 2021: Programma di ricerca scientifica per una laguna regolata” founded by the Provveditorato Interregionale OOPP per il Veneto, Trentino Alto Adige e Friuli Venezia Giulia;

- Involved in several other national and international research projects.
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SERVICE

Department of Geosciences, University of Padova (UniPD)

2018-present. Vice-Coordinator of the Doctoral Course in Earth Sciences, UniPD.

2013-present. Member of the PhD Board of the Doctoral Course in “*Earth Sciences*”, UniPD.

2018-present. Member, as representative of the Associate Professors, of the Department Council, UniPD.

2012-2014. Member, as representative of the Assistant Professors, of the Department Council, UniPD.

2010- 2013. Member of the PhD Board, Doctoral Course in “*Civil and Environmental Engineering Sciences*”, UniPD.

Reviewer for (excerpta): Nature Geoscience; Nature Communications; PNAS; Scientific Reports Nature; Geophysical Research Letters; Current Biology; Plos-One, Earth Science Reviews, Earth Surface Processes and Landforms; Journal of Geophysical Research- Earth Surface and Biogeosciences; Water Resources Research; Advances in Water Resources; Geomorphology; Marine Geology; Estuarine Coastal and Shelf Science.

Guest Editor for the Special Issues:

-“Ecogeomorphological feedbacks of water fluxes, sediment transport and vegetation dynamics in rivers and estuaries”, Advances in Water Resources – Editors: D’Alpaos, Toffolon, Camporeale;

-“10th Anniversary of the River, Coastal and Estuarine Morphodynamics Symposium”, Earth Surface Processes and Landforms – Editors: Zolezzi, Carniello, D’Alpaos, Lanzoni, Tubino.

Convener of the following sessions and national and International Conferences (excerpta):

- AGU Fall Meeting: “Pattern Formation in Earth System Sciences” (2010-11-12-14); Coastal Geomorphology and Morphodynamics” (2012); “Biogeodynamics and Earth System Sciences”, (2014).

- EGU General Assembly: “Coasts and Estuaries” (2008); Estuarine processes” (2013-2017); Integrative studies of the River-Sea-Continuum” (2018, 2019).

- ECSA 55, 56: “Ecogeomorphology of estuarine systems” (2015, 2016).

Member of the Local Organizing Committee of the “*River, Coastal, and Estuarine Morphodynamics*” Conference, Padova, Italy, September 2017.

Member of the Executive Committee of the “International Conference on Fluvial Sedimentology 2023”, 2 - 7 July 2023, Riva del Garda, Italy

TEACHING AND SUPERVISION

Various courses taught at the Department of Geosciences and at the Department ICEA, University of Padova and at the PhD School in Civil and Environmental Engineering Science, University of Padova, since 2007.

Supervision and Co-supervision of **14 Ph.D. students** (7 already graduated); and 8 Postdocs.

Supervision and Co-supervision of more than 50 M.Sc. and B.Sc. theses.

Sincerely,

Prof. Andrea D’Alpa

2023/07/08