

Curriculum Vitae – Adriano Vinca

Postdoctoral research assistant
Energy, Climate, and Environment (ECE) Program
International Institute of Applied Systems Analysis (IIASA)
Schlossplatz 1, 2361 Laxenburg, Austria
vinca@iiasa.ac.at | www.iiasa.ac.at/staff/vinca

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RESEARCH INTERESTS AND EXPERTISE

I am interested in studying the challenges and solutions related to climate change impacts and sustainable development, with a policy-oriented perspective on the the energy, water and food systems.

I work with integrated assessment models that include complex interaction between the multiple natural and socio-economic systems and I am interested in making these tools understandable, usable and interactive.

EDUCATION

2021 - PhD in the Mechanical Engineering Department, [University of Victoria](#), BC, Canada: “Integrated Climate-Land-Energy-Water Solutions: Modelling and Assessment of Sustainability Policy Options”;

2017 - Master of Science in Energy Engineering (in English), [Politecnico di Milano](#), Italy;

2014 - Bachelor Degree in Energy Engineering, [Politecnico di Milano](#), Italy.

PROFESSIONAL APPOINTMENTS

2017-present - Research assistant at the [International Institute for Applied Systems Analysis](#) (IIASA) in the “Energy Climate and Environment” Program;

2016-2017 - Research assistant at [Fondazione Eni Enrico Mattei](#) (Milan). I worked on my Master thesis, “The role of carbon capture and storage for climate stabilization: a numerical assessment”. Then I continued working within the WITCH IAM team, focusing on low temperature increase scenarios;

2016 - Worked remotely for the International Energy Agency (IEA), contributing to the “Water-energy nexus” chapter in the “World Energy Outlook 2016” report, I worked on water management and desalination.

LANGUAGES

Italian (native); English (fluent); German (moderate, “B2”-grade);

DIGITAL COMPETENCES

Office (MS Office); Math & programming (R, GAMS, MATLAB, L^AT_EX, Python);

Technical Graphics (AutoCad Inventor, SolidWorks);

Graphics and Media (Adobe Illustrator, Photoshop, Premiere Pro, Ableton)

Other tools (ARCGIS, QGIS, Microsoft Project).

PEER-REVIEWED PUBLICATIONS

Vinca, A. , Parkinson, S., Riahi, K. , Byers, E. , Siddiqi, A., Muhammad, A., Ilyas, A., Yogeswaran, N., et al. (2020). Transboundary cooperation a potential route to sustainable development in the Indus basin. *Nature Sustainability*. doi: [10.1038/s41893-020-00654-7](https://doi.org/10.1038/s41893-020-00654-7)

Wada, Y. , Vinca, A. , Parkinson, S., Willaarts, B. , Magnuszewski, P., Mochizuki, J., Mayor, B., Wang, Y., et al. (2019). Co-designing Indus Water-Energy-Land Futures. *One Earth*. doi: [10.1016/j.oneear.2019.10.006](https://doi.org/10.1016/j.oneear.2019.10.006)

Vinca, A. , Parkinson, S., Byers, E. , Burek, P. , Khan, Z., Krey, V. , Diuana, F., Wang, Y., et al. (2019). The Nexus Solutions Tool (NEST): An open platform for optimizing multi-scale energy-water-land system transformations. *Geoscientific Model Development Discussions* 13 (3), 1095-1121. doi: [10.5194/gmd-2019-134](https://doi.org/10.5194/gmd-2019-134)

Huppmann D, Gidden M, Fricko O, Kolp P, Orthofer C, Pimmer M, Kushin N, Vinca A, et al. , (2019) “The MESSAGEix Integrated Assessment Model and the ix modeling platform (ixmp)”, *Environmental Modelling & Software*. doi: [10.1016/j.envsoft.2018.11.012](https://doi.org/10.1016/j.envsoft.2018.11.012)

Vinca A., Rottoli M., Marangoni G., Tavoni M., (2018) “The role of Carbon Capture and Storage electricity in attaining 1.5 and 2 °C”, *International Journal of Greenhouse Gas Control*. doi: [10.1016/j.ijggc.2018.07.020](https://doi.org/10.1016/j.ijggc.2018.07.020)

Vinca A., Emmerling J., Tavoni M., (2018) “Bearing the cost of stored carbon leakage”, *Frontiers Energy Research*. doi: [10.3389/fenrg.2018.00040](https://doi.org/10.3389/fenrg.2018.00040)

POLICY BRIEFS &
REPORTS

Willaarts, B. , Vinca, A. , Parkinson, S., Riahi, K. , Byers, E. , Heyl, A. (2021). Co-operation and joint investments are key to sustainable development in the Indus basin. IIASA Policy Brief. Laxenburg, Austria: PB-28
<http://pure.iiasa.ac.at/id/eprint/17131/>

Willaarts B, Langan S , Balkovic J , Burek P , Byers E , Deppermann A, Frank S , Gidden M, et al. (2018) “Integrated Solutions for Water, Energy and Land Progress report 3”. United Nations Industrial Development Organization (UNIDO) and International Institute for Applied Systems Analysis (IIASA) , Laxenburg, Austria.
<http://pure.iiasa.ac.at/id/eprint/15892/>

THESIS

Vinca A (2021) “Integrated Climate-Land-Energy-Water Solutions: Modelling and Assessment of Sustainability Policy Options”. Doctoral Thesis, University of Victoria, Mechanical Engineering Department.

Rottoli M, Vinca A (2017) “The role of carbon capture and storage for climate stabilization : a numerical assessment”, Master Thesis, Politecnico di Milano, Energy Engineering Department. <https://www.politesi.polimi.it/handle/10589/133979>

PRESENTATIONS
AND CONFERENCES

2021:

“COVID-19, energy demand, and climate mitigation.” 90th IIASA committee meeting Austrian Academy of Science, Vienna, Austria. 10/06/2021

[“Climate Land Energy Water nexus models reviewed across scales: progress, gaps and best accessibility practices”](#). European Geosciences Union (EGU) General Assembly 2020, Vienna, Austria. 19-30/04/2020

[“Impacts of COVID-19 induced energy demand changes on emissions and mitigation challenges”](#). European Geosciences Union (EGU) General Assembly 2020, Vienna, Austria. 19-30/04/2020

2020:

Convener: “Multisector Dynamics: Energy–Water–Land Interactions at Multiple Scales”, American Geophysical Union Fall Meeting 2020, Washington D.C., US (online) 10/12/2020

Poster: [“A Green Energy Recovery After COVID-19 Pandemic Can Reduce Costs of Climate Change Mitigation”](#), American Geophysical Union Fall Meeting 2020, Washington D.C., US (online) 9/12/2020

“A green energy recovery after COVID-19 pandemic can reduce costs of climate change mitigation”. Thirteenth IAMC Annual Meeting 2020, online. 03/12/2020

[“Benefits of Cross-Border Cooperation for Achieving Water-Energy-Land Sustainable Development Goals in the Indus Basin”](#). European Geosciences Union (EGU) General Assembly 2020, Vienna, Austria. 4-8/05/2020

2019:

“Achieving Climate-land-energy-water Sustainable Development Goals in the Indus Basin and the Role of Cross-border Cooperation”. INFORMS Annual Meeting 2019, Seattle, US, 20/10/2019

“An Open Platform or Optimizing Energy-water-land System Transformations Towards Sustainable Development”. INFORMS Annual Meeting 2019, Seattle, US, 20/10/2019

Presented at ISWEL project results at: “Capacity development and stakeholder workshop on water–energy–land nexus scenarios for the Indus basin: Consultation and joint learning”. ICIMOD, Kathmandu, Nepal, 21-22/08/2019

“Achieving Climate-Land-Energy-Water Sustainable Development Goals in the Indus Basin”. European Geosciences Union (EGU) General Assembly, Vienna, Austria, 10/04/2019

“A framework for charting water-energy-land nexus solutions for the Indus basin”, United Nations Industrial Development Organization 16/04/2019. And International Atomic Energy Agency delegation at IIASA 10/04/2019

2018:

“A framework for charting water-energy-land nexus solutions for the Indus basin”, American Geophysical Union Fall Meeting 2018, Washington D.C., 14/12/2018

Poster “Quantifying interactions between smart irrigation technologies and energy transformation in the Indus Basin” (on behalf of Ansir Ilyas), American Geophysical Union Fall Meeting, Washington D.C., 14/12/2018

“A Framework for Water-Energy-Land Nexus Solutions: Case study of the Indus River Basin”, 2nd U.S.-EU Workshop on Understanding the Water-Energy Nexus, US Department of Energy, 7/12/2018

“Integrated assessment of water-energy-land nexus solutions for the Indus River Basin”, Mechanical Engineering Seminars, University of Victoria, 28/11/2018

“MESSAGE-basin Model applied to Indus”, Indus Basin Knowledge Forum (IBKF), Laxenburg, 2/06/2018.

2017:

“The role of CCS in achieving low carbon targets : a numerical assessment”, 1st International Summer School CIRED, Paris, 5/07/2017

JOURNAL REVIEWS *Science of the Total Environment, Climatic Change, Futures, Energy Efficiency*