P.D., Dr., Mag. Stephan Alexander Pietsch

Senior Research Scholar, Tropical Ecosystem Modelling
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Higher Education

2014	**Venia docendi** (Prof.) in *Ecosystem Modelling* University of Natural Resources and Life Sciences
2002	**Doctor rer. nat. techn.** (Dr.), *Biotechnology* – excellent success University of Natural Resources and Life Sciences
1995	**Magister rer. nat.** (MSc), *Plant Physiology and Ecology*– excellent success University of Vienna
1992	**State Diploma** (BSc), *Biology* University of Vienna **State Diploma** (BSc), *Formal Logics* University of Vienna
1987	Highschool (Matura) in Vienna, Austria

Appointments

2014 -	**Senior Research Scholar**, IIASA/ESM – International Institute of applied Systems Analysis / Ecosystem Services and Management Program, Laxenburg, Austria
2014 -	**Professor (PD)**, Institute of Silviculture, Department of Forest and Soil Sciences, University of Natural resources and Life Sciences, Vienna, Austria.
2011&2013	**Paternal leave** (6 months)
2008	**Visiting Professor**, Division of Forestry, University of KwaZulu Natal, Pietermaritzburg, South Africa.
2007 – 2013	**Assistant Professor**, Institute of Silviculture, Department of Forest and Soil Sciences, University of Natural resources and Life Sciences, Vienna, Austria.
2000 – 2007	**Research Assistant**, Institute of Forest Growth Research, Department of Forest and Soil Sciences, University of Natural Resources and Life Sciences, Vienna, Austria.

Funded projects (project leader and PI)

- FRED: Freedom, emergence and dimensions. ASA Exploratory project, introducing ergodic theory of chaos into systems analysis. 2016-2017. Cooperation partners: IIASA (ESM and ASA), IAS (US) and UKZN (SA). Funding: IIASA SAF-2015, PI
- Egide: establishes a cross validated framework for carbon cycle modelling of the tropical African moist forest using two different ecosystem models (Biome-BGC and LPJ-GUESS) and field data from 2861 individual research plots distributed over the western Congo basin. 2013-2015. Cooperation between France (Montpellier) and Austria (Vienna). Funding: French and Austrian foreign Ministries. FR 13/2013, Austrian PI
- AgriCarb: assessed agriculture nd forestry impacts on ecosystem Carbon storage in Gabon. 2009-2012Funding: SDP – Gabon, PI
- Ergodic: analyses climatic thresholds of ecosystem stability for forests of the Congo basin using methods from ergodic theory. 2008-2013. Funding: FWF-P20660-B16, PI.

Other activities

- Ad-hoc reviewer for >20 international high ranked journals and funding institutions.
- Member of EGU, AGU, ATBC and ISEM
- Deputy coordinator of IUFRO WG 1.02.02 Ecology and silviculture of moist forests in the tropics.
- Member of the Tropical managed Forest Observatory (TmFO). Site leader TmFO Africa.

Publications (last 7 years)

More than 80 peer reviewed publications since 2000

1. Garcia CA, Savilaakso S, Verburg RW, Gutierrez V, Wilson SJ, Krug CB, Sassen M, Robinson BE, et al. (2020). The Global Forest Transition as a Human Affair. One Earth 2 (5): 417-428. DOI:10.1016/j.oneear.2020.05.002.
2. Franklin O , Harrison SP, Dewar R, Farrior CE, Brännström Å, Dieckmann U , **Pietsch** S, Falster S, et al. (2020). Organizing principles for vegetation dynamics. Nature Plants DOI:10.1038/s41477-020-0655-x.
3. Lesiv M, See L, Mora B, **Pietsch** SA, Fritz S, Bun H, Sendabo S, Kibuchi S, et al. (2019). Accuracy Assessment of the ESA CCI 20M Land Cover Map: Kenya, Gabon, Ivory Coast and South Africa. IIASA Working Paper. Laxenburg, Austria: WP-19-009
4. Akujärvi A, Shvidenko A, & Pietsch S (2019). Modelling the impacts of intensifying forest management on carbon budget across a long latitudinal gradient in Europe. Environmental Research Letters 14 (3) DOI:10.1088/1748-9326/aaf766.
5. Song C, **Pietsch** SA, Kim M, Cha S, Park E, Shvidenko A, Schepaschenko D , Kraxner F, et al. (2019). Assessing Forest Ecosystems across the Vertical Edge of the Mid-Latitude Ecotone Using the BioGeoChemistry Management Model (BGC-MAN). Forests 10 (6): e523. DOI:10.3390/f10060523.
6. Hadi , Krasovskii A , Maus V , Yowargana P, **Pietsch** SA, & Rautiainen M (2018). Monitoring Deforestation in Rainforests Using Satellite Data: A Pilot Study from Kalimantan, Indonesia. Forests 9 (7): e389. DOI:10.3390/f9070389.
7. Hadi H, Krasovskii A , Maus V , Yowargana P, **Pietsch** SA, & Rautiainen M (2018). The potential of Landsat time series to characterize historical dynamic and monitor future disturbances in human-modified rainforests of Indonesia. In: European Geosciences Union General Assembly 2018, 9-13 April 2018, Vienna, Austria.
8. Wehkamp J, **Pietsch** SA, Fuss S, Gusti M, Reuter W, Koch N, Kindermann G , & Kraxner F (2018). Accounting for institutional quality in global forest modeling. Environmental Modelling & Software 102: 250-259. DOI:10.1016/j.envsoft.2018.01.020.
9. Bustier B, Ngoy A, **Pietsch** S, & Mosnier A (2017). Implications of changes in tropical shifting cultivation intensification on land productivity and GHG-related biogeochemistry. In: European Geosciences Union (EGU) General Assembly 2017, 23–28 April 2017, Vienna, Austria.
10. Franklin O , Han W, Dieckmann U , Cramer W, Brännström Å, **Pietsch** SA, Rovenskaya E, Prentice IC, et al. (2017). Using natural selection and optimization for smarter vegetation models - challenges and opportunities. In: European Geosciences Union (EGU) General Assembly 2017, 23–28 April 2017, Vienna, Austria.
11. **Pietsch** S (2017). Adressing optimality principles in DGVMs: Dynamics of Carbon allocation changes. In: European Geosciences Union (EGU) General Assembly 2017, 23–28 April 2017, Vienna, Austria.

12. **Pietsch** S (2017). Assessing tropical rainforest growth traits: Data – Model fusion in the Congo basin and beyond. In: European Geosciences Union (EGU) General Assembly 2017, 23–28 April 2017, Vienna, Austria.

13. Mosnier A, Tonga P, Mant R, Pirker J, **Pietsch** S, Bocqueho G, Bodin B, Gillet P, et al. (2017). *CoForTips Congo basin forests: tipping points for biodiversity conservation and resilience. Final Report (La modélisation des changements d'utilisation des terres dans les pays d'Afrique Centrale 2000-2030).* IIASA Contract No. 13-102

14. Gourlet-Fleury S, Gazull L, Bigombe Logo P, Billand A, Bolaluembe P-C, Boyemba F, Dessard H, Doucet J-L, et al. (2017). Are logging concessions a threat to the peatlands in DRC? (Les concessions d'exploitation forestière menacent-elles les tourbières en République démocratique du Congo?). Bois et Forets des Tropiques 334 (4): 3-6.

15. Lee J, Lee S, Han SH, Kim S, Roh Y, Salim KA, **Pietsch** SA, & Son Y (2017). Estimating Carbon Dynamics in an Intact Lowland Mixed Dipterocarp Forest Using a Forest Carbon Model. Forests 8 (4): p. 114. DOI:10.3390/f8040114.

16. **Pietsch** S & Bednar JE (2015). Ergodic to Non-ergodic Behavior Transitions and Hysteresis in Ecosystem Models. In: Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa, 11 -13 November, 2015, Laxenburg, Austria.

17. **Pietsch** S, Bednar JE, Mosnier A, & Obersteiner M (2015). Probabilistic Spatial and Temporal Resilience Landscapes for the Congo Basin. In: Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa, 11 -13 November, 2015, Laxenburg, Austria.

18. **Pietsch**, S.A. 2014. Modelling Ecosystem Pools and Fluxes. Implementation and application of biogeochemical ecosystem models. Habilitation. University of Natural Resources and Life Sciences, Vienna, Austria. 303pp.

19. Sist, P. et al., 2014. The Tropical managed Forests Observatory: addressing the future of tropical logged forests. Applied Vegetation Science. doi:10.1111/avsc.12125

20. **Pietsch**, S.A., Gautam, S. 2013. Ancient origin of a rainforest in Gabon as revealed by carbon isotope data of vegetation and soil. The Holocene 23: 1778-1785.