

Personal information

Jin-Song von Storch (née Xu), born December 12, 1961 in Peking, China
Senior scientist at Max-Planck Institute for Meteorology
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Nationality: German

Education

- 1990: Dr. rer. nat. (Ph.D.): Geoscience, University Hamburg
Dissertation : “Analysis and Prediction of El Niño Southern Oscillation
Phenomenon Using Principal Oscillation Pattern Analysis ”
Supervision: Hans von Storch
- 1987: Diplom (M.Sc.): Meteorology, University Hamburg
- 1984: Vordiplom (B.Sc.): Physics, University Hamburg

Professional career

- Since 2018: Professor at University Hamburg
- 2005: *venia legendi*, University Hamburg
Inaugural Lecture: “Einführung in Statistik: Das Konzept des Schätzens”
- Since 2004: Senior Scientist (W2), Group Leader, Deputy Director
of department The Ocean in the Earth System (now Department Climate Variability)
at Max-Planck Institute for Meteorology
- 1999-2004: Heisenberg Programme, University Hamburg
- 1998: Habilitation, University Hamburg
Habilitationsschrift: “Statistik und Konzepte der Klimavariabilität”
- 1996-1998: Research scientist, University Hamburg
- 1990-1996: Postdoc, Max-Planck Institute for Meteorology, Hamburg

Selected professional activities

- 2011 - 2020 Editor of Ocean Dynamics
- 2015 - 2018 Associated Editor of Oxford Research Encyclopedia

Awards

- 2015: Visiting professor to Ocean University of China (selected by the Recruitment Program of High-end Foreign Experts of the State Administration of Foreign Experts Affairs, China)
- 1999-2004: Heisenberg Programme awarded by DFG (Germany Research Foundation)
- 1981-1987: Stipend awarded by the Chinese government

Projects

14. EERIE, European Eddy RIch Earth System Models: 2023-2026, 2 PostDocs for 4 years
13. EUREC⁴A-OA (a JPI Ocean & Climate International Research Project), "Improving the representation of small-scale nonlinear ocean-atmosphere interactions in Climate Models by innovative joint observing and modelling approaches": 2020-2023, 1 PostDoc for 1.5 years
12. TRR181, Project W2: Energy transfer through low-mode internal waves (1 Postdoc for the period July 2016 -June 2017, 1 PhD position for the period July 2017-June 2020, 1 PhD for July 2021-June 2024)
11. Cluster of Excellence "Climate, Climatic Change, and Society" (CLICCS), Project A6 "Earth System variability and predictability in a changing climate": (1 PostDoc for the period 2020-2025)
10. EU Horizon 2020 project PRIMAVERA 'PRocess based climate sIMulation:AdVances in high-resolution modelling and European climate Risk Assessment', PI, (1 postdoc for the period 2016-2019)
9. MiKlip project 'Atmospheric and Oceanic Data Assimilation Plus ENsemble Generation' (AODA-PENG), Co-PI, 1 postdoc position for 2013-2014
8. EU-project THOR 'Thermohaline Overturning - at Risk?', WP 'Coordinated multi-model ensemble experiments to assess the predictability of the THC', Co-PI, 1 postdoc position granted for 2009-2011
7. CLiSAP II, Research Area A 'Climate variability and predictability', Coordinator, 1 postdoc position granted for 11.2012-10.2017
6. CLiSAP project 'Stochastic parameterizations in atmosphere and ocean models and their implications for climate prediction', PI, 1 postdoc position granted for 09.2009-01.2012
5. STORM: Consortium project 'High-resolution community climate change simulations (<https://verc.enes.org/community/projects/national-projects/german-projects/storm/>), 2009-2014, Coordinator, 1 scientific programmer supported by CLiSAP for 2010-2011

4. SFB 512: Project (TP) 'Vorhersagbarkeit in Ozean und Meereis', PI (TP-Leiterin), 1 PhD position granted for 2007-2009
3. SFB 512: Project (TP) 'Variabilität in Ozean und Meereis', PI (TP-Leiterin), 1 PhD position granted for 2004-2006
2. SFB 512 'Cyclones and the North Atlantic Climate System': Project (TP) 'Entwicklung eines empirischen atmosphärischen Modells zur Untersuchung der niederfrequenten ozeanischen Variabilität', PI (TP-Leiterin), 1 PhD position granted for 2001-2003
1. DFG project (Sachbeihilfe) 'Die Atmosphäre und ihr Drehimpuls', PI, 1 PhD position granted for 2001-2004

Publications (peer-reviewed and book contributions)

100. **von Storch, Jin-Song**, 2024: Randomness and Integral Forcing. *Tellus A: Dynamic Meteorology and Oceanography*, 76(1), p. 74–89. Available at: <https://doi.org/10.16993/tellusa.4065>.
99. Chengcheng Yang, Xuhua Cheng, **Jin-Song von Storch**, Jianhuang Qin, Bo Qiu, 2023: Interbasin Differences in Interannual Variations of the Antarctic Circumpolar Current Transport. *Journal of Geophysical Research - Oceans*, 128, e2023JC020327. <https://doi.org/10.1029/2023JC020327>
98. Ssebandeke, John, **Jin-Song von Storch**, and Nils Brüggemann, 2023: Sensitivity of the global oceanic Lorenz Energy Cycle. *Ocean Dynamics* 74, 17. <https://doi.org/10.1007/s10236-023-01582-8>.
97. Lüscho, Veit and **Jin-Song von Storch**, 2024: Sensitivity of internal-tide generation to stratification and its implication for deep overturning circulations. *Oceanogr.*, 54, 319–330, <https://doi.org/10.1175/JPO-D-23-0058.1>.
96. **von Storch, Jin-Song**, Eileen, Hertwig, Veit Lüscho, Nils Brüggemann, Helmuth Haak, Peter Korn, Vikram Singh, 2023: Open-ocean tides simulated by ICON-O, version icon-2.6.6. *Geoscientific Model Development*, 16 (17), pp 5179-5196. <https://gmd.copernicus.org/articles/16/5179/2023/>, DOI:10.5194/gmd-16-5179-2023.
95. **von Storch, J.-S.** and V. Lüscho, 2023: Wind power input to ocean near-inertial waves diagnosed from a 5-km global coupled atmosphere-ocean general circulation model. *Journal of Geophysical Research: Oceans*, 128, e2022JC019111. <https://doi.org/10.1029/2022JC019111>
94. Hohenegger et al., 2023: ICON-Sapphire: simulating the components of the Earth System and their interactions at kilometer and subkilometer scales. *Geosci. Model Dev.*, 16, 779–811, <https://doi.org/10.5194/gmd-16-779-2023>

93. **von Storch, J.-S.**, 2022: On Equilibrium Fluctuations. *Tellus A: Dynamic Meteorology and Oceanography*, 74(1), pp.364–381. DOI: <http://doi.org/10.16993/tellusa.25>
92. Korn, P., Brüggemann, N., Jungclaus, J. H., Lorenz, S. J., Gutjahr, O., Haak, H., L.Linardakis, C. Mehlmann, U. Mikolajewicz, D. Notz, D.A. Putrasahan, V. Singh, **J.-S.von Storch**, X. Zhu, and J. Marotzke, 2022: ICON-O: The ocean component of the ICON Earth system model—Global simulation characteristics and local telescoping capability. *Journal of Advances in Modeling Earth Systems*, 14, e2021MS002952. <https://doi.org/10.1029/2021MS002952>
91. Jungclaus,J. H., S. J. Lorenz, H. Schmidt, V. Brovkin, N. Brüggemann, F. Chegini, T. Crüger, P. De-Vrese, V. Gayler, M. A. Giorgetta, O. Gutjahr, H. Haak, S. Hagemann, M. Hanke, T. Ilyina, P. Korn, J. Kröger, L. Linardakis, C. Mehlmann, U. Mikolajewicz, W. A. Müller, J. E. M. S. Nabel, D. Notz, H. Pohlmann, D. A. Putrasahan, T. Raddatz, L. Ramme, R. Redler, C. H. Reick, T. Riddick, T. Sam, R. Schneck, R. Schnur, M. Schupfner, **J.-S. von Storch**, F. Wachsmann, K.-H. Wieners, F. Ziemer, B. Stevens, J. Marotzke, M. Claussen, 2022: The ICON Earth System Model Version 1.0. *Journal of Advances in Modeling Earth Systems*, 14, e2021MS002813. <https://doi.org/10.1029/2021MS002813>
90. Lohmann, K., D. A. Putrasahan, **J.-S. von Storch**, O. Gutjahr, J. H. Jungclaus, H. Haak, 2021: Response of Northern North Atlantic and Atlantic Meridional Overturning Circulation to Reduced and Enhanced Wind Stress Forcing. *Journal of Geophysical Research: Oceans*, 126, e2021JC017902. <https://doi.org/10.1029/2021JC017902>
89. Lüscho, V., Marotzke, J., and **J.-S. von Storch** 2021: Overturning response to a doubling of the surface wind stress in an eddying and a non-eddying ocean. *Journal of Physical Oceanography*, 51, 1007-1020. DOI: <https://doi.org/10.1175/JPO-D-20-0176.1>
88. Putrasahan, D. A., Gutjahr, O., Haak, H., Jungclaus, J., Lohmann, K., Roberts, M. J., **von Storch, J.-S.**, 2021: Effect of resolving ocean eddies on the response of the climate system to abrupt 4xCO₂ forcing. *Geophysical Research Letters*, 48, e2020GL092049. <https://doi.org/10.1029/2020GL092049>
87. Putrasahan, D.A. and **J.-S. von Storch**, 2021: Piecewise Evolutionary Spectra: A practical approach to understanding projected changes in spectral relationships between circulation modes and regional climate under global warming. *Geophysical Research Letters*, 48, e2021GL093898. <https://doi.org/10.1029/2021GL093898>
86. Gutjahr O., Brüggemann N., Haak H. , Jungclaus J. H., Putrasahan D. A., Lohmann K., **von Storch J.-S.**, 2021: Comparison of ocean vertical mixing schemes in the Max Planck Institute Earth System Model (MPI-ESM1.2). *GMD*, 14, 2317–2349. <https://doi.org/10.5194/gmd-14-2317-2021>.

85. Jonas Löb, Janna Kühler, Christian Mertens, Maren Walter, Zhuhua Li, **Jin-Song von Storch**, Zhongxiang Zhao, and Monika Rhein, 2020: Observations of the low mode internal tide and its interaction with mesoscale flow south of the Azores. *Geophysical Research: Oceans*, 125, e2019JC015879. <https://doi.org/10.1029/2019JC015879>
84. Li, Z. and **von Storch, J.-S.**, 2020: M_2 internal-tide generation in STORMTIDE2. *Journal of Geophysical Research: Oceans*, 125, e2019JC015453. <https://doi.org/10.1029/2019JC015453>
83. Reimann, L. and **von Storch, J.-S.** , 2020: A phase-space consideration of changing climate-PDF. *Climate Dynamics*, 54:2633–2662, <https://doi.org/10.1007/s00382-020-05130-8>
82. Xin Huang, Tianjun Zhou, Aiguo Dai, Hongmei Li, Chao Li, Xiaolong Chen, Jingwen Lu, **Jin-Song von storch**, Bo Wu, 2020: South Asian summer monsoon projections constrained by the interdecadal Pacific oscillation. *Science Advances*, 6, eaay6546.
81. Gutjahr O., Putrasahan D. A., Lohmann K., **von Storch J.-S.**, Jungclaus J. H., Brüggemann N., Haak H., Stössel A., 2019: Max Planck Institute Earth System Model (MPI-ESM1.2) for High-Resolution Model Intercomparison Project (HighResMIP). *Geoscientific Model Development*, 12, 3241-3281, doi: 10.5194/gmd-12-3241-2019.
80. Köhler, J., Walter, M., Mertens, C., Stiehler, J., Li, Z., Zhao, Z., **von Storch, J.-S.**, and Rhein, M. 193, 2019: Energy Flux Observations in an Internal Tide Beam in the Eastern North Atlantic. *Journal of Geophysical Research: Oceans*, 5747– 5764. 124. <https://doi.org/10.1029/2019JC015156>
79. Putrasahan, D.A., K. Lohmann, **J.-S. von Storch**, J. Jungclaus, O. Gutjahr, H. Haak, 2019: Surface Flux Drivers for the Slowdown of the Atlantic Meridional Overturning Circulation in a High-Resolution Global Coupled Climate Model. *Journal of Advances in Modeling Earth Systems*. <https://doi.org/10.1029/2018MS001447>.
78. **von Storch, Jin-Song**, 2019: Energetics of the climate system. *Oxford Research Encyclopedias. Climate Science. Subject: Climate Systems and Climate Dynamics: Theoretical Foundations*. DOI:10.1093/acrefore/9780190228620.013.88
77. Lüscho, V., **von Storch, J.-S.** and Marotzke, J., 2019: Diagnosing the Influence of Mesoscale Eddy Fluxes on the Deep Western Boundary Current in the 1/10° STORM / NCEP Simulation. *J. Phys. Oceanogr.* 49. 751-764. <https://doi.org/10.1175/JPO-D-18-0103.1>
76. **von Storch, J.-S.**, G. Badin and M. Oliver, 2019: The interior energy pathway: Inertial gravity wave emission by ocean flows. In *Energy transfers in Atmosphere and Ocean* (pp.53-85), Carsten Eden and Armin Iske, Eds., Springer, Cham.

75. Mertens, C., J. Köhler, M. Walter, **J.-S. von Storch** and M. Rhein, 2019: Observations and models of low mode internal waves in the ocean. In Energy transfers in Atmosphere and Ocean (pp.127-143), Carsten Eden and Armin Iske, Eds., Springer, Cham.
74. Mauritsen, T., J. Bader, T. Becker, J. Behrens, M. Bittner, R. Brokopf, V. Brovkin, M. Claussen, T. Crueger, M. Esch, I. Fast, S. Fiedler, D. Fläschner, V. Gayler, M. Giorgetta, D.S. Goll, H. Haak, S. Hagemann, C. Hedemann, C. Hohenegger, T. Ilyina, T. Jahns, D. Jimenez de la Cuesta Otero, J. Jungclaus, T. Kleinen, S. Kloster, D. Kracher, S. Kinne, D. Kleberg, G. Lasslop, L. Kornbluh, J. Marotzke, D. Matei, K. Meraner, U. Mikolajewicz, K. Modali, B. Moöbis, W. A. Müller, J. E. M. S. Nabel, C. C. W. Nam, D. Notz, S.-S. Nyawira, H. Paulsen, K. Peters, R. Pincus, H. Pohlmann, J. Pongratz, M. Popp, T. Raddatz, S. Rast, R. Redler, C. Reick, T. Rohrschneider, V. Schemann, H. Schmidt, R. Schnur, U. Schulzweida, K. D. Six, L. Stein, I. Stemmler, B. Stevens, **J.-S. von Storch**, F. Tian, A. Voigt, P. de Vrese, K-H Wieners, S. Wilkenskjaeld, A. Winkler, and E. Roeckner, 2019: Developments in the MPI-M Earth System Model version 1.2 (MPI-ESM1.2) and its response to increasing CO₂. Journal of Advances in Modeling Earth Systems. DOI:10.1029/2018MS001400.
73. Yuan, D., Li, X. Wang, Z., Li, Y., Wang, J., Yang, Y., Hu, X., Tan, S., Zhou, H., Wardana, A.K., Surinati, D., Purwandana, A., Ismail, M.F.A., Avianto, P., Dirhamsyah, D., Arifin, Z. and **von Storch, J.-S.**, 2018: Observed Transport Variations in the Maluku Channel of the Indonesian Seas Associated with Western Boundary Current Changes. J. Phys. Oceanogr., 48, 1803-1813.
72. Tian, Fangxing, **J.-S. von Storch** and E. Hertwig, 2018: Impact of SST diurnal cycle on ENSO asymmetry. Clim Dyn. <https://doi.org/10.1007/s00382-018-4271-7>.
71. Stössel, A., **von Storch, J.-S.**, Notz, D., Haak, H. and Gerdes, R., 2018: High-frequency and meso-scale winter sea ice variability in the Southern Ocean in a high-resolution ocean model. Ocean Dynamics, 68, 347-361.
70. Li, Z., **J.-S. von Storch** and M. Müller, 2017: The K₁ internal tide simulated by a 1/10° OGCM. Ocean Modelling, 113, 145-156.
69. **von Storch, J.-S.**, H. Haak, E. Hertwig, I. Fast, 2016: Vertical heat and salt fluxes due to resolved and parameterized meso-scale eddies. Ocean Modelling, 108, 1-19. <https://doi.org/10.1016/j.ocemod.2016.10.001>
68. Tian, F., **J.-S. von Storch**, and E. Hertwig, 2016: Air-sea fluxes in a climate model using hourly coupling between the atmospheric and the oceanic components. Clim. Dyn., DOI 10.1007/s00382-016-3228-y.
67. Haarsma, R.J., M. Roberts, P.L. Vidale, C.A. Senior, A. Bellucci, Q. Bao, P. Chang, S. Corti, N.S. Fučkar, V. Guemas, J. von Hardenberg, W. Hazeleger, C. Kodama, T. Koenigk, L.R.

- Leung, J.Lu, J.-J. Luo, J. Mao, M.S. Mizieliński, R. Mizuta, P. Nobre, M. Satoh, E. Scoccimarro, T. Semmler, J. Small, **J.-S. von Storch**, 2016: High resolution model inter-comparison project (HighResMIP). *Geosci. Model Dev.*, 9, 4185-4208, doi:10.5194/gmd-9-4185-2016.
66. Berner, J., U. Achatz, L. Batté, L. Bengtsson, A. Cámara, H. M. Christensen, M. Colan-geli, D.R.B. Coleman, D. Crommelin, S. Dolaptchiev, C.L.E. Franzke, P. Friederichs, P. Imkeller, H. Järvinen, S. Juricke, V. Kitsios, F. Lott, V. Lucarini, S. Mahajan, T.N. Palmer, C. Penland, M. Sakradzija, **J.-S. von Storch**, A. Weisheimer, M. Weniger, J-I Yano, 2016: Stochastic parameterization: Towards a new view of weather and climate models. *BAMS* (in press), doi: 10.1175/BAMS-D-15-00268.1
65. Li, Z., **J.-S. von Storch** and M. Müller, 2015: The M2 internal tide simulated by a $1/10^\circ$ OGCM. *J. Phys. Oceanogr.*, 45, 3119-3135. doi: <https://doi.org/10.1175/JPO-D-14-0228.1>
64. Rimac, A., **J.-S. von Storch** and C. Eden, 2015: The total energy flux leaving the ocean's mixed layer. *J. Phys. Oceanogr.* 46, 1885-1900. DOI: 10.1175/JPO-D-15-0115.1.
63. Krismer, T. R., M. A. Giorgetta, **J. S. von Storch**, and I. Fast, 2015: The influence of the spectral truncation on the simulation of waves in the tropical stratosphere, *J. Atmos. Sci.*, 72, 3819-3828. doi:10.1175/JAS-D-14-0240.1
62. Corti, S., T. Palmer, M. Balmaseda, A. Weisheimer, S. Drijfhout, N. Dunstone, W. Hazeleger, J. Kröger, H. Pohlmann, D. Smith, **J.-S. von Storch** and B. Wouters, 2015: Impact of initial conditions versus external forcing in decadal climate predictions: A sensitivity experiment. *J. Climate*, 28, 4454-4470.
61. Niklas Boers, Bodo Bookhagen, José A. Marengo, **Jin-Song von Storch**, Norbert Marwan, Jürgen Kurths, 2015: Extreme rainfall of the South American monsoon system: A dataset comparison using complex networks. *J. Climate*, 28, 1031-1056, DOI:10.1175/JCLI-D-14-00340.1.
60. Chuanyu Liu, Fan Wang, Xiping Chen **Jin-Song von Storch**, 2014: Interannual variability of the Kuroshio onshore intrusion along the East China Sea shelf break: Effects of the Kuroshio volume transport. *Journal of Geographical research: Oceans*. DOI: 10.1002/2013JC009653. p6190-6209.
59. Hertwig, E., **J.-S. von Storch**, D. Handorf, K. Dethloff, I. Fast and T. Krismer, 2014: Effect of horizontal resolution on ECHAM6-AMIP performance. *Clim. Dyn.* 45, 185-211.
58. Müller, M. J.Y. Cherniawsky, M.G.G. Foreman, **J.-S. von Storch**, 2014: Seasonal variation of the M₂ tide. *Ocean Dynamics*, DOI 10.1007/s10236-013-0679-0.

57. Rimac, A., **J.-S. von Storch**, C. Eden and H. Haak, 2013: The influence of high-resolution wind stress field on the power input to near-inertial motions in the ocean. *Geophys. Res. Lett.* 40, 1-5, doi:10.1002/grl.50929.
56. Exarchou, E., **J.-S. von Storch** and J.H. Jungclauss, 2013: Sensitivity of transient climate change to tidal mixing: Southern Ocean heat uptake in climate change experiments performed with MPI ECHAM/MPIOM. *Clim. Dyn.*, DOI:10.1007/s00382-013-1776-y.
55. Hazeleger, W., B. Wouters, G. van Oldenborgh, S. Corti, T. Palmer, D. Smith, N. Dunstone, J. Kroeger, H. Pohlmann, **J.-S. von Storch**, 2013: Predicting multi-year North Atlantic Ocean variability. *J. Geophys. Res. - Oceans*, 118, 1087-1098, doi:10.1002/jgrc.20117.
54. Li, H. and **J.-S. von Storch**, 2013: On the Fluctuations of Buoyancy Fluxes Simulated in a $1/10^\circ$ OGCM. *J. Phys. Oceanogr.*, 43, 1270-1287
53. Exarchou, E., **J.-S. von Storch** and J.H. Jungclauss, 2012: Impact of tidal mixing with different scales of bottom roughness on the general circulation. *Ocean Dynamics*, 62, 1545-1563, doi:10.1007/s10236-012-0573-1.
52. **von Storch, J.-S.**, C. Eden, I. Fast, H. Haak, D. Hernández-Deckers, E. Maier-Reimer, J. Marotzke, D. Stammer, 2012: An estimate of the Lorenz energy cycle for the world ocean based on the $1/10^\circ$ STORM/NCEP simulation. *J. Phys. Oceanogr.* 42, 2185-2205.
51. Li, C., **J.-S. von Storch**, J. Marotzke, 2012: Deep-ocean heat uptake and equilibrium climate response. *Clim Dyn.* DOI 10.1007/s00382-012-1350-z.
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44. Krueger, O., **J.-S. von Storch**, 2011: A simple climate model for decadal climate prediction. *J. Climate*, 24, 1276-1283.
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42. Hernández-Deckers, D., and **J.-S. von Storch**, 2010: Energetics responses to increases in greenhouse gas concentration. *J. Climate*, 23, 3875-3887.
41. Seiffert, R. and **J.-S. von Storch**, 2010: A stochastic analysis of the impact of small-scale fluctuations on tropospheric temperature response to CO₂ doubling. *J. Climate*, 23, 2307-2319
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23. **von Storch, J.-S.**, P. Müller und E. Bauer, 2001: Climate Variability in Millennium Integrations with Coupled Atmosphere-Ocean GCMs. - A Spectral View. *Clim. Dyn.*, 17, 375-389. <https://link-springer-com.e-bis.mpimet.mpg.de/article/10.1007/s003820000110>.
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17. **von Storch, J.-S.**, 1999: Natural climate variability and concepts of natural climate variability. In *Anthropogenic Climate Change*, Eds. H. von Storch and G. Flöser, Springer Verlag, 1999, 83-135.
16. **von Storch, J.-S.**, 1999: What determines the spectrum of a climate variable at zero frequency. *J. Climate*, 12, 2124-2127.
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14. **von Storch, J.-S.**, 1998: Statistik und Konzepte der Klimavariabilität. Habilitationsschrift, Universität Hamburg.
13. **von Storch, J.-S.**, Kharin, V., Cubasch, U., Hegerl, G.C., Schriever, D., von Storch, H., Zorita, E., 1997: A description of a 1260-year control integration with the coupled ECHAM1/LSG general circulation model. *J. Climate*, 10, 1526-1544.
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11. Tahvonen O., H. von Storch and **J.-S. von Storch**, 1995: Atmospheric CO₂ accumulation and problems in dynamically efficient emission abatement. G. Boero and Z.A. Silberston (ed.): *Environmental Economics*. St. Martin's Press ISBN 0-312-12579-8, 234-265
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7. Latif, M, Barnett, T.P., Cane, M.A., Flügel, M., Graham, N.E., von Storch, H., **Xu, J.-S.**, 1994: A review of ENSO prediction studies. *Clim. Dyn.*, 9, 167-179.
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5. **Xu, J.-S.**, 1992: On the relationship between the stratospheric quasi-biennial oscillation and the tropospheric Southern Oscillation. *J. Atmos. Sci.*, 49, 725-734.
4. **Xu, J.-S.**, 1990: Analysis and Prediction of El Niño Southern Oscillation Phenomenon Using Principal Oscillation Pattern Analysis. PhD thesis, University Hamburg
3. **Xu, J.-S.** and H. von Storch, 1990: Predicting the state of the Southern Oscillation using Principal Oscillation Pattern Analysis. *J. Climate*, 3, 1316-1329.
2. von Storch, H. and **J.-S. Xu** 1990: Principal Oscillation Pattern analysis of the 30- to 60-day oscillation in the tropical troposphere. *Clim. Dyn.*, 4, 175-190.
1. **Xu, J.-S.**, **H. von Storch** and H. van Loon, 1990: The performance of four spectral GCMs in the Southern Hemisphere: The January and July Climatology and the semianual wave. *J. Climate*, 3, 53-70.

Book

- Imkeller, P. and J.-S. von Storch, 2001: Proceedings of the workshop on stochastic climate models. Birkhäuser Verlag (ISBN 3-7643-6520).

Other publications

18. Reitz, T. and J.-S. von Storch, 2017: Oceanic internal waves internally generated in a 0.1° OGCM. In *Research Activities in Atmospheric and Oceanic Modelling*, WGNE Blue Book.
17. von Storch, J.-S., 2014: Comment on 'Oceanic mass transport by mesoscale eddies' by Zhengguang Zhang, Wei Wang and Bo Qiu, *Science* 345, 322; DOI:10.1126/science.1252418; <http://comments.sciencemag.org/content/10.1126/science.1252418>
16. Masumoto, Y., H. Sasaki, and J.S. von Storch, 2010: Editorial to OFES special issue of *Ocean Dynamics*. *Ocean Dynamics*, 60:631-632.

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14. Stenzel, Oliver and J-S von Storch, 2002: Modelling of Atmospheric Angular Momentum using a simple AGCM. Ritchie (Ed.): Research activity in atmospheric and oceanic modeling. Rep. No. 32. WMO/ICSU/IOC Joint Scientific Committee for the World Climate Research Programme. WMO Commission for Atmospheric Sciences.
13. Montavez, J.P. and J.-S. von Storch, 2000: An empirical model of atmospheric dynamics. Ritchie (Ed.): Research activity in atmospheric and oceanic modeling. WMO/ICSU/IOC Joint Scientific Committee for the World Climate Research Programme. WMO Commission for Atmospheric Sciences.
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11. J.-S. von Storch, 1998: Spectral features of variability of deep water masses. In Staniforth (Ed): “Research activities in atmospheric and oceanic modeling”. Report No. 27. WMO Weather Prediction Research Programmes and WMO/ICSU/IOC World Climate Research Programme.
10. von Storch, J.-S. and E. Manzini, 1997: On the ability of a general circulation model to simulate two large-scale variations in the Southern Hemisphere. - in R.A. Madden, E.C. Stephens, J.W. Hurrell, G.N. Kiladis, G.A. Meehl and D.J. Shea (Eds): Harry van Loon Symposium, Studies in Climate II. NCAR/TN-433+PROC.
9. Kharin , V., and J.-S. von Storch, 1995: Analysis of variability in a 1260-year integration of a coupled atmosphere-ocean general circulation model. In Report No. 26, Center for Ocean-Land-Atmosphere Studies. 4041 Power Mill Road., Suite 302, Calverton, MD 20705.
8. von Storch, J.-S., 1995: On the reddest atmospheric modes generated by a coupled atmosphere-ocean general circulation model. In proceeding of the 6th International Meeting on Statistical Climatology.
7. von Storch, J.-S., 1995: On large-scale climate variability. In Report No. 26, Center for Ocean-Land-Atmosphere Studies. 4041 Power Mill Road., Suite 302, Calverton, MD 20705.

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5. von Storch, H., G. Bürger; R. Schnur; J.-S. Xu, 1991: POP art. - M. Latif (ed.): Strategies for Future Climate Research, Max Planck Institut für Meteorologie, Hamburg, 109- 136
4. Xu, J.-S.; U. Mikolajewicz; H. von Storch, 1989: Die Halbjahreswelle im Luftdruck auf der Südhalbkugel: Beobachtung und Simulation. - *promet* 1/2, 1989 42 -47.
3. Xu, J.S. and H. von Storch, 1989: Prediction of extremes of the Southern Oscillation with POP analysis. - *Proc. 4IMSC, Rotorua*, 102-109
2. von Storch, H., U. Weese and J. S. Xu, 1989: Simultaneous analysis of space-time variability: Principal Oscillation Patterns and Principal Interaction Patterns with applications to the Southern Oscillation - *Proc 4 IMSC*, 41-45; also: *MPI Report 34; Z. Meteor.*, 40 (1990), 99-103
1. von Storch,H. and J.-S. Xu, 1987: Southern Hemisphere: Intercomparison with observed sea level pressure. - *Climate simulations with the ECMWF T21-model in Hamburg*. - G. Fischer (ed.): *Large Scale Atmospheric Modelling Report 1*, 57-74

Postdoctorial Supervision

Fraser William Goldsworth (EU-project EERIE); Jürgen Kröger (BMBF-project MiKlip, EERIE); Veit Lüschoff (TRR181); Florian Schütte (JPI-project EUREC⁴A-OA); Veit Lüschoff (TRR 181); Zhuhua Li (TRR 181); Dian Putrasahan (EU-project PRIMAVERA, EERIE); Oliver Bothe (CLiSAP); Eileen Hertwig (CLiSAP); Hongmei Li (CLiSAP)

Doctorial supervision (as principal supervisor)

15. Andrea Mosso, since March 2024
14. Zoi Kourkouraidou, since February 2022
13. John Seebandeke, since May 2020
12. Veit Lüschoff, 2020: The deep western boundary current in an eddying ocean
11. Thomas Reitz, 2017-2019 (interrupted April 2019)
10. Fangxian Tian, 2016: Effects of coupling frequency on climate simulated by a coupled AO-GCM
9. Zhuhua Li, 2016: Internal tides simulated by a 1/10° OGCM
8. Antonija Rimac, 2014: The role of wind induced near-inertial waves on the energetics of the ocean
7. Eleftheria Exarchou, 2012: Tidal mixing and large-scale circulation
6. Daniel Hernandez Decker, 2010: Warming up the atmosphere's heat engine: atmospheric energetics with higher greenhouse gas concentrations
5. Rita Seiffert, 2008: Impact of small-scale fluctuations on climate sensitivity and its stochastic analysis
4. Balan Sarojini Beena, 2006: Effect of daily surface flux anomalies on the time-mean oceanic circulation
3. Juan Pedro Montavez, interrupted after 2 years and completed later in Spain
2. Oliver Joachim Stenzel, 2004: Dynamische und thermodynamische Einflüsse auf den Drehimpuls der Atmosphäre und dessen Auswirkung auf die allgemeine Zirkulation
1. Martina Manuela Junge, 1998: Stochastisch angeregte großräumige Variationen der windgetriebenen Zirkulation

Doctorial supervision (as co-supervisor)

Chengcheng Yang (CSC student), November 2022-; Heves Pilatin (TRR 181), 2022-; Manita Chouksey, 2018: “Disentangling gravity waves from balanced flow”; Chao Li, 2012: “Long-term stability and adjustment toward equilibrium in a future warm climate”

Master supervision

5. Lucas Reimann, 2018: The evolution of climate under an increasing atmospheric CO₂-concentration – a case study focusing on the atmospheric general circulation based on a grand ensemble
4. Tobias Haufschild, 2015: Effect of increasing horizontal and vertical resolution on atmospheric blocking with focus on the impact of small-scale phenomena in ECHAM-6
3. Oliver Krüger, 2009: A simple empirical model for decadal climate prediction
2. Florian Rauser, 2007: Construction of a low-dimensional model from a general circulation model
1. Muhammad-Kassiem Jacobs (Diplomarbeit), 1992: Untersuchung der Einflusses der stratosphärischen quasi-biennial oscillation mit Hilfe der POP-Analyse und der assoziierten Korrelationsmuster auf verschiedene meteorologische Variablen

Supervising visiting students

Beth McDonagh, PhD student from CMCC, Bologna, 01/23-03/23; Léo Maumey, master student, CentraleSupélec, Gif-Sur-Yvette, 03/23-08/23

Undergraduate supervision (as principal supervisor) Lucas Reimann (Bachelor), 2015, “Temperal evolution of propability density functions: a case study of the 2m temperature obtained from a 100-member ensemble with MPI-ESM”

Courses

Statistics	1 SS	regularly in WS since 2003	Uni Hamburg
Exercise on statistics	1SS	regularly in WS	Uni Hamburg
Air-sea coupling and air-sea interactions	Block	December 2021	TRR 181 Course on Fundamentals of Meteorology Uni Hamburg
Statistical tools in modeling: Spectral analysis	Block		IMPRS
Statistical tools in modeling: Hypothesis testing	Block		IMPRS
The role of conceptual models (theory) in building knowledge (Diploma student- doctoral seminar III)	2SS	SS 2005 SS 2006	Uni Hamburg
The role of quasi-realistic models in generating knowledge (Diploma student- doctoral seminar II)	2 SS	WS 05/06 WS06/07	Uni Hamburg
Possibilities and limits of statistical methods (Diploma student- doctoral seminar I)	2 SS	WS 2004	Uni Hamburg
Climate physics	2 SS	WS 2000/01	Uni Hamburg
Exercise on theoretical meteorology II	2 SS	SS 2000 SS 2001 SS 2002 SS 2003 WS 03/04	Uni Hamburg
Exercise on theoretical meteorology I	2 SS	WS 01/02 WS 02/03	Uni Hamburg
Stochastic climate models	1 SS Block Block	WS 1998/1999 2000 2003	Uni Hamburg Uni Utrecht SMHI, Norrköping
Statistical dynamical linear methods for describing atmospheric variability	1 SS	SS 1998	Uni Hamburg

Selected engagement, academic self-governance and services

PI in EUREC ⁴ A-OA,	a JPI Ocean Climate International Research Project, 2020-2023
PI in EERIE	a Horizon Europe project, 2023-2026
Project chair	in Cluster of Excellence “Climate, Climatic Change, and Society” (CLICCS), 2020-2025.
Mentor	Viadrina Mentoringprogramm of Europa-Universität Viadrina, 2021-2022.
since 2017	Member of the board TRR181 (Vorstand)
2023 -	Member of the EERIE governing board