Literature list for course Seminar on "Earth system science for sustainability studies" GEOF347, autumn 2018:

Welcome to this course!

We will jointly read a series of publications, each presented by a - different - participant of the course. All papers belong to an overall topic. Depending on the number of participants, we will either select more papers later on, or limit the amount of papers, or give each participant more than 1 paper to summarise. We will discuss this jointly at the beginning of the course in order to find an agreement which works well in practice.
The presentations (oral, PowerPoint slides) should not just describe the paper in question. The presenters should take the following items into account:
- Describe the general subject and topic; give background so that all get an easy entry into the paper.
- Explain jargon; possibly add a glossary at the end of your presentation to clarify some terminology.
- Explore also some of the papers cited in the specific paper for the presentation and possibly add figures/arguments from those papers as well.
- Describe methods, results, discussion, and conclusion.
- Add a critical appraisal of the paper (does it make sense, what does it well, where are weak points).

Contact in case of questions: Christoph Heinze (christoph.heinze@uib.no)

Overall topic in autumn 2018: ***Earth system tipping elements and tipping points****.*

Preliminary list ***of papers to be dealt with (update will come at beginning of course, the list will be slimmed down and adjusted to the interests/exertise of the participants):***

Important papers about the general/central topic (to be read by all):

Lenton, T. M., Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S., and Schellnhuber, H. J.: Tipping elements in the Earth's climate system, P Natl Acad Sci USA, 105, 1786-1793, 2008. www.pnas.org/cgi/doi/10.1073/pnas.0705414105

Scheffer, M., S. Carpenter, J. A. Foley, C. Folke, and B. Walker (2001), Catastrophic shifts in ecosystems, Nature, 413(6856), 591-596, doi: Doi 10.1038/35098000.

Papers on more specialised aspects of the topic:

Bahn, O., N. R. Edwards, R. Knutti, and T. F. Stocker (2011), Energy policies avoiding a tipping point in the climate system, Energ Policy, 39(1), 334-348, doi: 10.1016/j.enpol.2010.10.002.

Bakun, A. (2017), Climate change and ocean deoxygenation within intensified surface-driven upwelling circulations, Philos T R Soc A, 375(2102), doi: ARTN 2016032710.1098/rsta.2016.0327.

Cai, Y. Y., K. L. Judd, T. M. Lenton, T. S. Lontzek, and D. Narita (2015), Environmental tipping points significantly affect the cost-benefit assessment of climate policies, P Natl Acad Sci USA, 112(15), 4606-4611, doi: 10.1073/pnas.1503890112.

Carpenter, S. R., and Brock, W. A. (2010) Early warnings of regime shifts in spatial dynamics using the discrete Fourier transform, Ecosphere, 1-+.

Dakos, V., et al. (2012), Methods for Detecting Early Warnings of Critical Transitions in Time Series Illustrated Using Simulated Ecological Data, Plos One, 7(7), doi: ARTN e4101010.1371/journal.pone.0041010.

Drijfhout, S., S. Bathiany, C. Beaulieu, V. Brovkin, M. Claussen, C. Huntingford, M. Scheffer, G. Sgubin, and D. Swingedouw (2015), Catalogue of abrupt shifts in Intergovernmental Panel on Climate Change climate models, P Natl Acad Sci USA, 112(43), E5777-E5786, doi: 10.1073/pnas.1511451112.

Gehlen, M., et al. (2014), Projected pH reductions by 2100 might put deep North Atlantic biodiversity at risk, Biogeosciences, 11(23), 6955-6967, doi: 10.5194/bg-11-6955-2014.

Gilbert, D., N. N. Rabalais, R. J. Diaz, and J. Zhang (2010), Evidence for greater oxygen decline rates in the coastal ocean than in the open ocean, Biogeosciences, 7(7), 2283-2296, doi: 10.5194/bg-7-2283-2010.

Graham, N. A. J., et al. (2015) Predicting climate-driven regime shifts versus rebound potential in coral reefs, Nature, 518, 94-+, 2015.

Handoh, I. C., and T. M. Lenton (2003), Periodic mid-Cretaceous oceanic anoxic events linked by oscillations of the phosphorus and oxygen biogeochemical cycles, Global Biogeochemical Cycles, 17(4), doi: Artn 109210.1029/2003gb002039.

Hare, W. L., W. Cramer, M. Schaeffer, A. Battaglini, and C. C. Jaeger (2011), Climate hotspots: key vulnerable regions, climate change and limits to warming, Reg Environ Change, 11, S1-S13, doi: 10.1007/s10113-010-0195-4.

Hughes, T. P., et al. (2013) Living dangerously on borrowed time during slow, unrecognized regime shifts, Trends Ecol Evol, 28, 149-155, 2013.

Kefi, S., et al. (2013) Early warning signals also precede non-catastrophic transitions, Oikos, 122, 641-648.

Lenton, T. M. (2011) Early warning of climate tipping points, Nat Clim Change, 1, 201-209.

Parmesan, C., et al. (2000) Impacts of extreme weather and climate on terrestrial biota, B Am Meteorol Soc, 81, 443-450.

Keil, R. (2017), Anthropogenic Forcing of Carbonate and Organic Carbon Preservation in Marine Sediments, Annu Rev Mar Sci, 9, 151-172, doi: 10.1146/annurev-marine-010816-060724.

McNeil, B. I., and R. J. Matear (2008), Southern Ocean acidification: A tipping point at 450-ppm atmospheric CO(2), P Natl Acad Sci USA, 105(48), 18860-18864, doi: 10.1073/pnas.0806318105.

Riche, O., S. C. Johannessen, and R. W. Macdonald (2014), Why timing matters in a coastal sea: Trends, variability and tipping points in the Strait of Georgia, Canada, J Marine Syst, 131, 36-53, doi: 10.1016/j.jmarsys.2013.11.003.

Ruppel, C. D., and J. D. Kessler (2017), The interaction of climate change and methane hydrates, Reviews of Geophysics, 55(1), 126-168, doi: 10.1002/2016rg000534.

Russill, C., and Z. Nyssa (2009), The tipping point trend in climate change communication, Global Environ Chang, 19(3), 336-344, doi: 10.1016/j.gloenvcha.2009.04.001.

Scheffer, M., J. Bascompte, W. A. Brock, V. Brovkin, S. R. Carpenter, V. Dakos, H. Held, E. H. van Nes, M. Rietkerk, and G. Sugihara (2009), Early-warning signals for critical transitions, Nature, 461(7260), 53-59, doi: 10.1038/nature08227.

Scheffer, M., et al. (2012), Anticipating Critical Transitions, Science, 338(6105), 344-348, doi: 10.1126/science.1225244.

Sgubin, G., et al. (2017) Abrupt cooling over the North Atlantic in modern climate models, Nat Commun, 8, 2017.

Shakhova, N., et al. (2017), Current rates and mechanisms of subsea permafrost degradation in the East Siberian Arctic Shelf, Nat Commun, 8, doi: ARTN 15872 10.1038/ncomms15872.

Tietsche, S., D. Notz, J. H. Jungclaus, and J. Marotzke (2011), Recovery mechanisms of Arctic summer sea ice, Geophys Res Lett, 38, doi: Artn L02707 10.1029/2010gl045698.

Wernberg, T., et al. (2016) Climate-driven regime shift of a temperate marine ecosystem, Science, 353, 169-172, 2016

Zhang, X., G. Lohmann, G. Knorr, and C. Purcell (2014), Abrupt glacial climate shifts controlled by ice sheet changes, Nature, 512(7514), 290-+, doi: 10.1038/nature13592.