

Climate variability across scales – from the butterfly’s wings to the age of the Earth – an online seminar series from Nov 2020 to March 2021 –

Dansgaard-Oeschger cycles: the hybrid beast of millennial climate variability

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Abstract:

One of the main contributors to palaeoclimate variability on millennial timescales is understood to be Dansgaard-Oeschger, or D-O, cycles. Our awareness of these phenomena arises primarily from quasi-periodic, abrupt transitions of large magnitude detected in $\delta^{18}\text{O}$ records from Greenland ice cores (e.g. Dansgaard et al, 1982; Johnsen et al, 1992), although there is evidence of similar variability in ocean sediment cores (e.g. Bond et al, 1993; Oppo and Lehman, 1995), tropical speleothems (e.g. Adolphi et al, 2018) and other archives and locations. D-O cycles have plenty to capture the imagination: (1) the strength and rapidity of their climate signals over Greenland, (2) their regularity throughout MIS3 (~60 to 30 thousand years before present) and occurrence during the last deglaciation contrasting with their absence during the Last Glacial Maximum and Holocene, and (3) their opposed characteristics in Greenland and Antarctica. However, this talk will focus on a different aspect of this problem that underpins the rest. If D-O cycles are a manifestation of internal climate variability, what are the key variables and processes involved and how would we define a “D-O mode” to characterize them?

The speaker: Heather Andres is a postdoc in the Department of Physics and Physical Oceanography at Memorial University in Newfoundland with strong expertise in atmosphere and climate modeling. More info:

https://www.researchgate.net/profile/Heather_Andres

Dates and speakers

1. **Jürg Schmidli** – IAU Frankfurt, Germany “**Variability at sub-daily time scales – from seconds to hours**”. Tuesday **10.11.2020 16:00-17:00** (*video on youtube, link below*)
2. **Christian Grams** – IMK-TRO/KIT, Germany “**Synoptic to sub-seasonal surface climate variability in the Atlantic-European region: the role of weather regimes.**”. Thursday **26.11.2020 16:00-17:00** (*video on youtube*)
3. **Tine Nilsen** – UIT, Norway “**Decadal variability and the scaling paradigm**”. **3.12.2020 16:00-17:00** (*video on youtube*)
4. **Michel Crucifix** – UC Louvain “**The challenge of centennial climate variability**”. Friday **18.12.2020 11:00-12:00** (*video on youtube*)
5. **Heather Andres** “**Millennial climate variability and Dansgaard-Oeschger events**” / **14 Jan 2021 16:00-17:00**
6. **Julie Schindlbeck-Belo**, GEOMAR Kiel, Germany – “**The links between volcanism and climate**”/ **20.1.2021 16:00-17:00**
7. **Oliver Friedrich**, GEOW HD, Germany – **Glacial/Interglacial climate variability (10^5 - 10^7 years)** **27.1.2021 11:00-12:00**
8. **Valerio Lucarini**, Reading, UK – “**Heatwaves and Cold Spells and Assessing Their Response to Climate Change**” **10.2.2021 10:00-11:00** (*title tbc*)
9. **Shaun Lovejoy**, McGill University/Canada – **Linking Climate Variability Across Scales –** **17.3.2021 16:00-17:00**

All times stated are CET (Berlin). Past lectures are available via the PAGES youtube channel:

https://www.youtube.com/playlist?list=PLSaCdvMD4wMLH_QfoKHyc5n4d-0_KBHDL

Registration: The link to the online meeting (Zoom) will be sent a day before the seminar to the first 75 registered participants. For technical questions and registration, please send an email to paleodyn@iup.uni-heidelberg.de with the mail header “CVAS lecture series”. **Contact:** Kira Rehfeld (krehfeld@iup.uni-heidelberg.de)

