



WESTFÄLISCHE
WILHELMS-UNIVERSITÄT
MÜNSTER



FACHBEREICH
PHYSIK

› Allgemeines Physikalisches Kolloquium

› Donnerstag, 30.06.2016 um 16 Uhr c.t.

Prof. dr. ir. Henk Dijkstra

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Intrinsic variability in the climate system

The behavior of Earth's global mean surface temperature over the period 1995-2015 has renewed the interest in processes determining climate variability. Although there was a radiation imbalance at the top of the atmosphere of about $0.5\text{-}1.0\text{ Wm}^{-2}$, as measured accurately since 2004, the global mean surface temperature did only increase by 0.05°C over the period 1998-2012 compared to about 0.12°C per decade over the period 1951-2012. While these observations have sometimes been used to claim that the effect of greenhouse gases on Earth's climate is negligible, the climate science community has stressed that 93% of the excess heat is stored in the ocean and only 1% in the atmosphere. The behavior of the global mean surface temperature is therefore, in addition to the changes in the surface radiation balance, also affected by changes in ocean heat storage.

In this presentation, I will discuss climate variability which is caused by intrinsic oceanic processes, such as instabilities of ocean currents. Much has been learned about this intrinsic variability through the application of methods from (stochastic) dynamical systems theory to a hierarchy of climate models. I will particularly focus on multidecadal variability in the climate system and discuss what is currently known about the mechanisms of this variability and its effect on ocean heat storage and consequently on the global mean surface temperature.

Kolloquiums-Kaffee
ab 16 Uhr vor dem Hörsaal

Wilhelm-Klemm-Straße 10
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