FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 07.02.2013, 16^{15} Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Mojib Latif

(GEOMAR Helmholtz Centre for Ocean Research and Kiel University)

Climate Change: Fact or Fiction

Given all the warnings about and plans to forestall global warming, people may be surprised in some regions to find, over the last fifteen years, that summers were no warmer than before, maybe even a bit cooler - and that winters were as cold, or colder, than they have been in the past decades. The global average surface air temperature may even cool during the next years; it is nothing unusual, just a natural fluctuation. It does not mean that global warming is not still being at work, or that we no longer need to worry about global temperatures possibly rising by as much as 4^oC by the end of the century - an unprecedented warming in the history of mankind if no measures are taken to cut global carbon dioxide emissions. The only problem is that by considering the mean of many models of global warming the natural fluctuations are averaged out, giving the false impression of a smooth climate trajectory, and this can be confusing.
But is climate predictable at all and what are the sources of climate predictability? One can conceptually distinguish between the predictability of the first and second kind. The former arises from the initial, whereas the latter from changing boundary conditions. Examples of the predictability of the first kind are weather prediction and seasonal forecasting. The atmospheric response to anomalous sea surface temperature (SST) or changed sea ice cover is an example of the predictability of the second kind. Climate change projections for the 21st century are an example of the mixed problem, as both the initial state and the future atmospheric composition are important.

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