

HIGHLIGHTS OF THE CAWSES PRIORITY PROGRAM IN GERMANY

FRANZ-JOSEF LÜBKEN

Leibniz Institute of Atmospheric Physics, 18225 Kühlungsborn, Germany

Email: luebken@iap-kborn.de

The German Science Foundation (Deutsche Forschungsgemeinschaft, DFG) has created a priority program for the period 2005-2011 closely linked to the international CAWSES project of SCOSTEP. The aim is a better understanding of the influence of the Sun on the terrestrial atmosphere on time scales from hours to centuries. The focus is on absorption of solar radiation and particles, the generation and modification of photochemically active trace gases, and the generation of waves, including tides. Medium and long term variation of solar activity and its influence on the terrestrial atmosphere is also studied to assess the importance of natural processes in long term trends in comparison with anthropogenic influences. Topics being investigated in the scope of this priority program include: 1. characterisation of the variability of solar forcing by electromagnetic radiation and by particle impact, 2. analysis of solar forcing impact on the thermal, dynamical, electro-dynamical, and compositional structure of the atmosphere in the height range from the upper troposphere to the lower thermosphere and on time scales from hours to centuries (including neutral gas, plasma, and aerosols), 3. investigation of the coupling mechanisms in the atmosphere, including transport of trace gases, and the generation, propagation and destruction of waves, 4. identification and understanding of solar signals in atmospheric parameters which are not directly influenced by the Sun, including a study of the relevant physical and photochemical processes, 5. comparison of solar induced long term variations with anthropogenic climate change (mainly above the troposphere), 6. laboratory studies of physical processes which are relevant for the coupling mechanisms mentioned above. Approximately 80-100 scientists at 25 research institutes in Germany are involved in this program. Some scientific highlights of the first phase of this program will be presented.

CAWSES

Franz-Josef Lübken, Leibniz Institute of Atmospheric Physics, 18225 Kühlungsborn, Schloss-Str. 6, Germany, Tel.: +49-38293-68100, Email: luebken@iap-kborn.de