

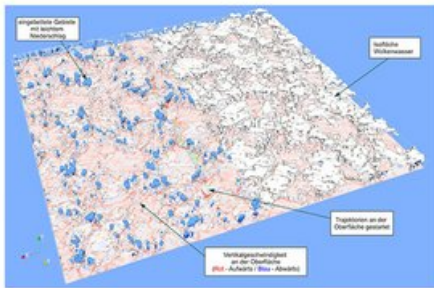
Modeling

Modeling



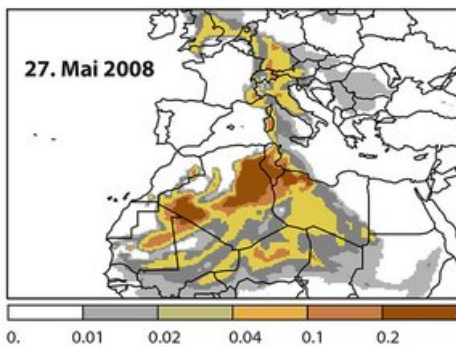
Source: NASA/TROPOS

Supercell: This video shows a supercell simulated by means of the model ASAMgpu developed at TROPOS. Supercells are strong thunderstorm cells with a rotating updraft. They often lead to hail, heavy precipitation events and occasionally tornados.



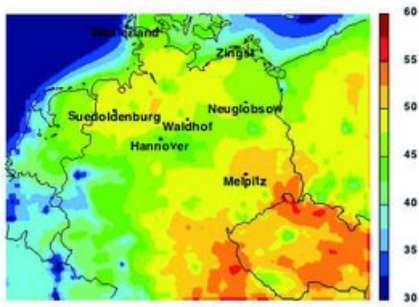
"Open Cells": A structure in marine stratocumulus clouds, Source: TROPOS

Open Cells: Current research focuses on causes and development of such cells. At TROPOS the influence of aerosol particles on precipitation development is investigated with the model ASAMgpu. Graphics processor units provide the required immense computing power.



Near-surface Saharan dust aerosol (unit:mg Dust/cubic metre air), Source: TROPOS

Saharan dust storms inject large amounts of mineral aerosol particles into the atmosphere. Several times a year Saharan dust is transported as far as Central Europe. These processes can be stimulated in atmospheric transport models as illustrated here for an episode in May 2008.



Prozentualer Anteil der sekundär gebildeten Partikelmasse an der Gesamtmasse für den Monat Oktober 2006.

Mass fraction of secondarily formed particulate matter for October 2006, Source: TROPOS

The particulate matter observed in the atmosphere is directly emitted or secondarily formed from gaseous precursors. This so-called secondary fraction can strongly vary in time and depends on the local conditions.

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