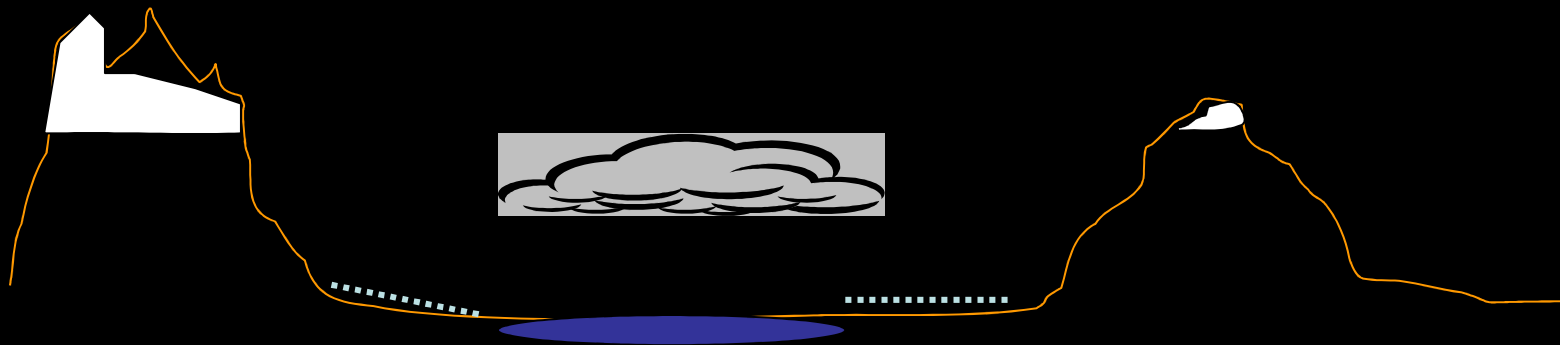


Local moisture circulation on the Tibetan plateau

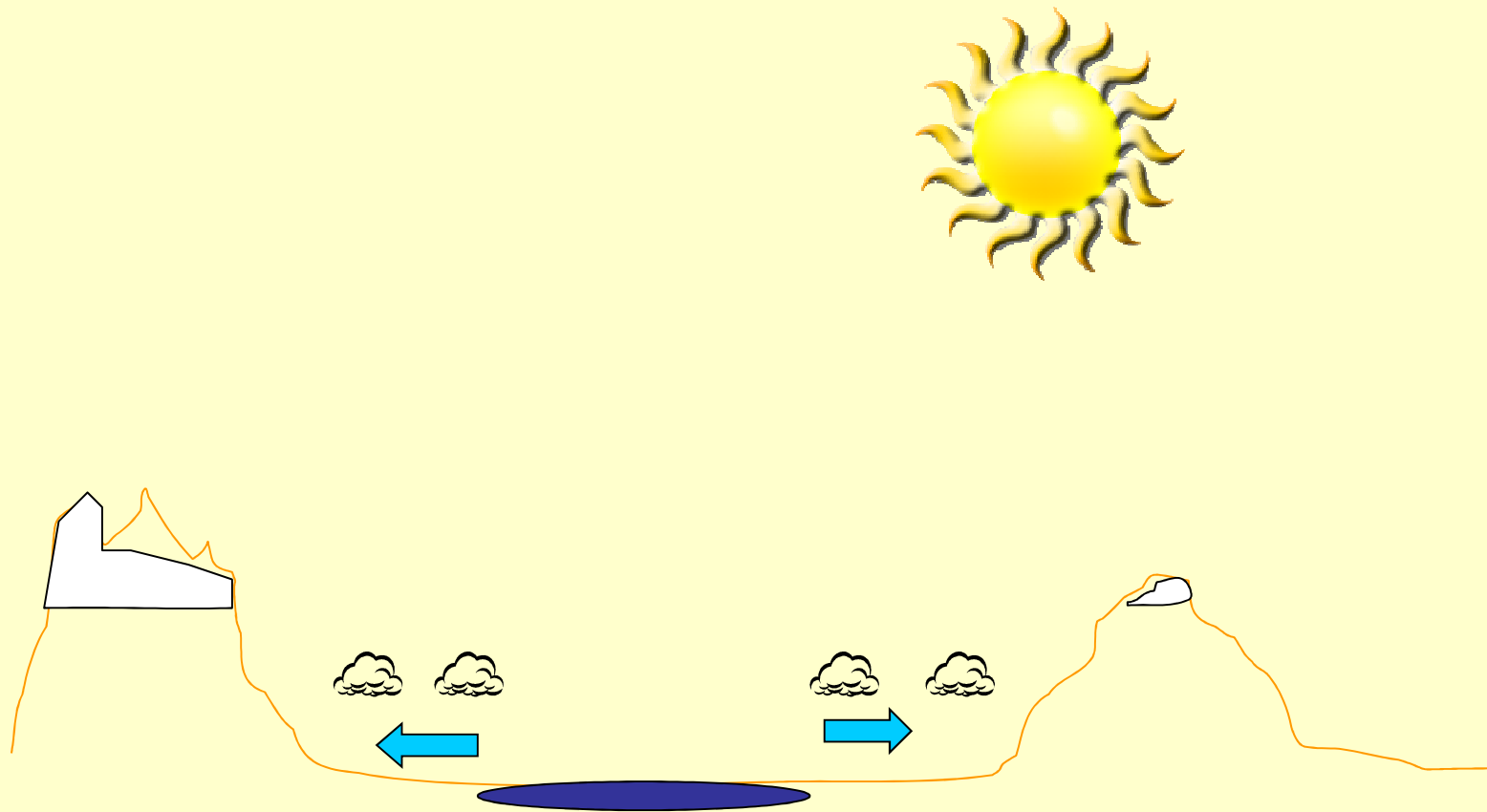
Slides by Hans-F Graf



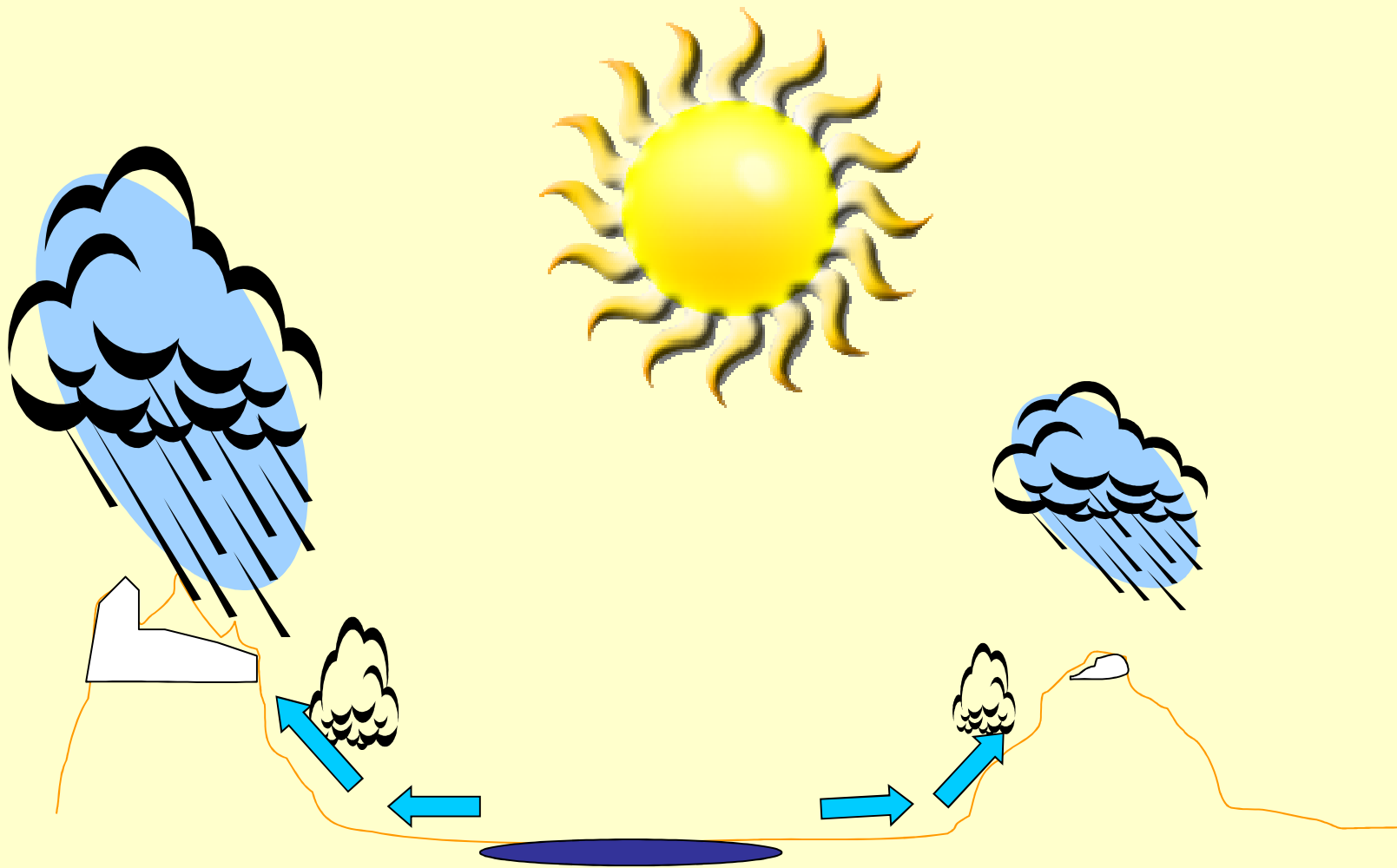
Shallow clouds during night form over the lake.
Dew is formed over the surrounding plains due
to strong radiative cooling



In the morning the rising sun eats the lake clouds away and dew evaporates, moistening the near ground atmosphere.



A **breeze** develops when land heats due to insolation. That creates a large field of fair weather clouds reflecting part of solar radiation back to space.



Early afternoon when the temperature at surface is highest, the small fair weather clouds increase and concentrate at the foothills. The breeze reaches the mountain range and rain/snow starts falling. Glaciers/snow trigger precipitation by additional cooling.

The following three slides showing the relevant computer modelling are from:

**7th Sino-German Workshop on Tibetan Plateau Research,
3 - 6 March 2011, in Hamburg**

Boundary-Layer Structure and Flux Measurements in Tibet

Atmosphere Ecology Glaciology Cluster
in the framework of
DFG Priority Programme 1372 (TiP)
Tibetan Plateau: Formation – Climate – Ecosystems

***Subproject: Mesoscale Circulations and Energy and Gas Exchange Over the
Tibetan Plateau***

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Y.Ma⁽³⁾ and T. Foken⁽²⁾**

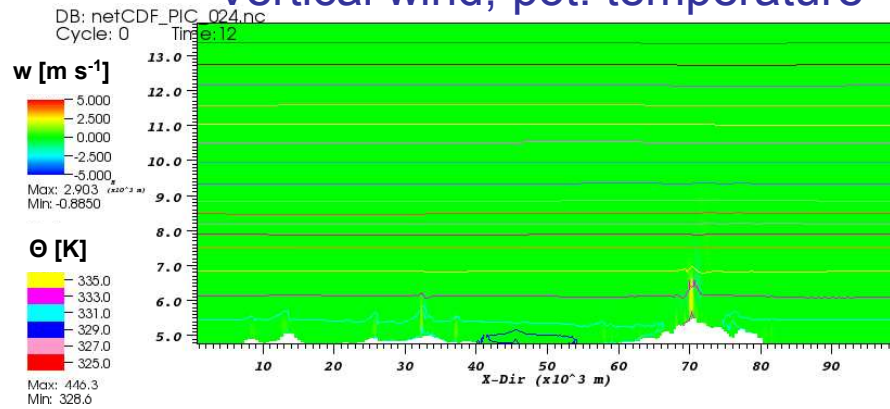
(1) University of Cambridge

(2) University of Bayreuth

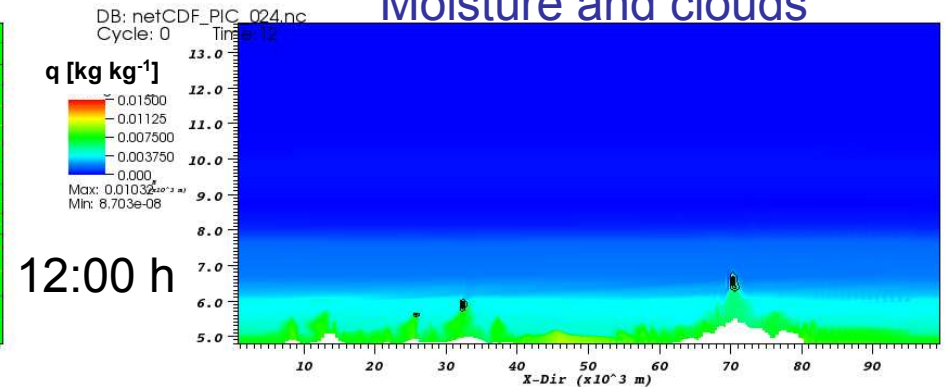
(3) Institute for Tibetan Plateau Research (ITP), Chinese Academy of Science (CAS), Beijing

Development of Convection and Clouds (I) – 2D

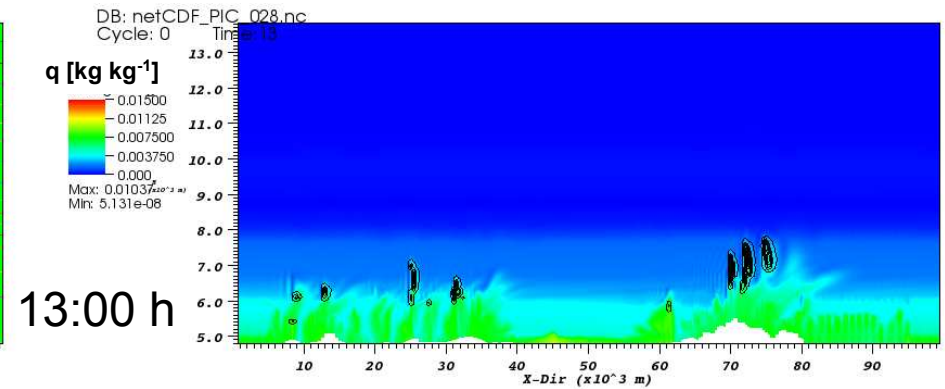
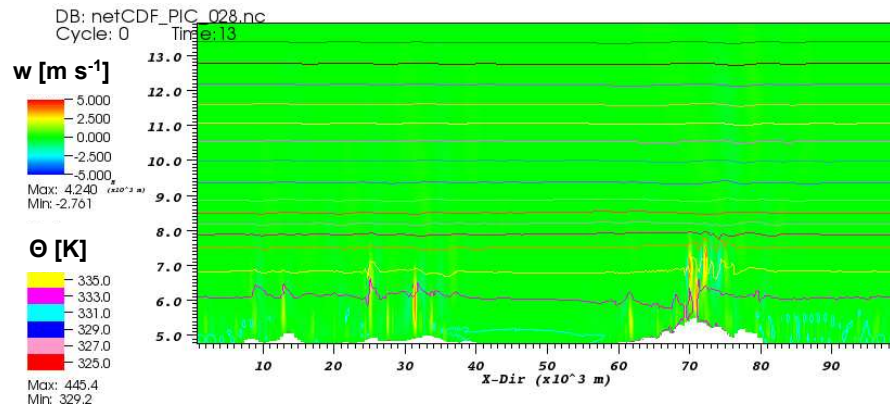
Vertical wind, pot. temperature



Moisture and clouds



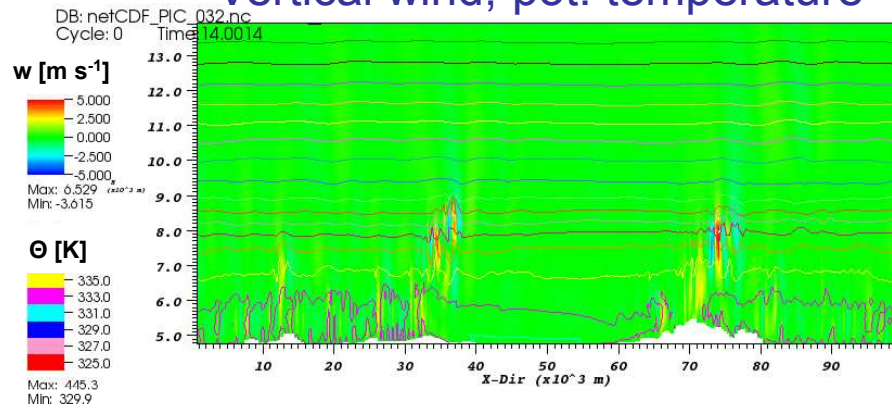
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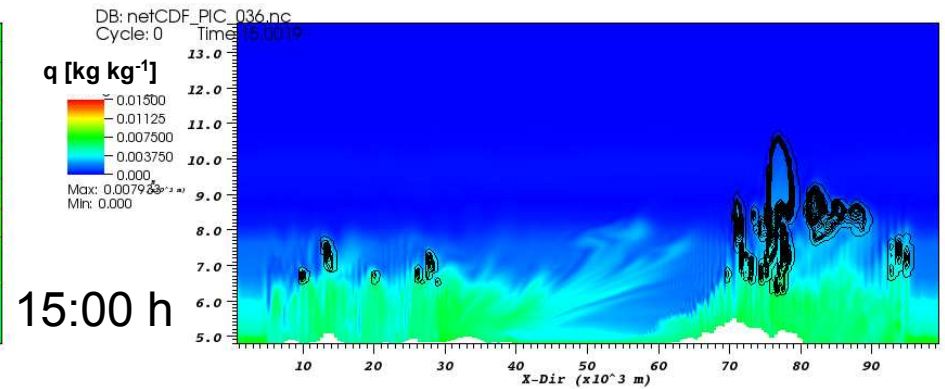
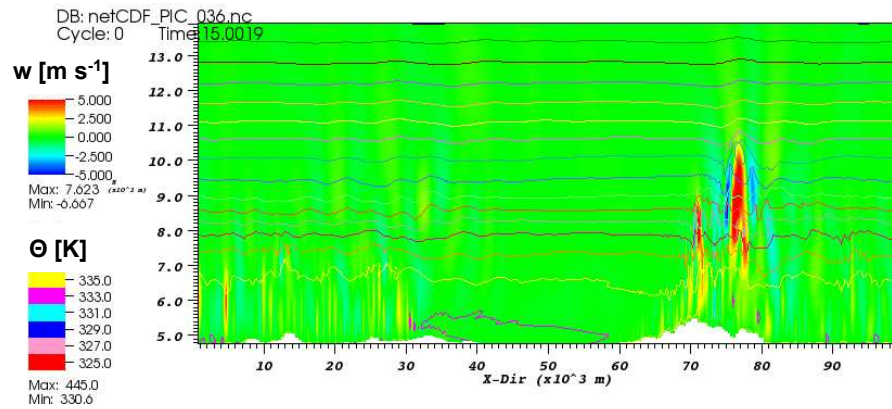
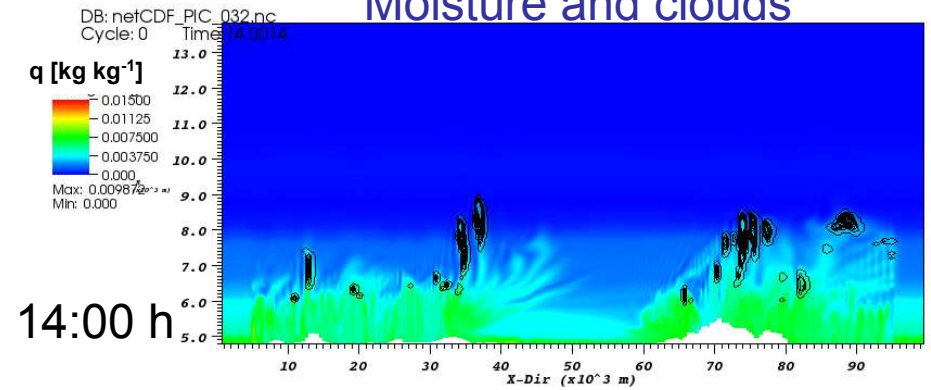
13:00 h

Development of Convection and Clouds(II)

Vertical wind, pot. temperature



Moisture and clouds



Thermally driven circulation at Nam Co lake

