

## **The status of activity on the Study Group 1.11 on Comparative Climatology**

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In addition to the earlier reported activities following studies have been initiated:

1. Thermal emission from the Titan using the Cassini spacecraft observations.
2. Thermal emission from the Venus surface/subsurface using radio telescopes observations.
3. Millimeter wave radiative transfer computations to study water vapor in mesosphere of the Venus.
4. In the area of numerical atmospheric modelling of fluids, Large Eddy Simulations (LES) has attained the status of a well-proven and most widely used tool, which can be utilized for addressing various aspects of the computational fluid dynamics. With a view to exploring the Large Eddy Simulations for the Martian Atmosphere, we have initiated the implementation of an existing Parallelized Large Eddy Simulation Model (PALM, <https://palm.muk.uni-hannover.de/trac>), an open source LES Model specifically designed and developed for turbulence and convective studies by Institute of Meteorology and Climatology (IMUK) of Leibniz Universitat Hannover, Germany. Initially the model is being tested for the Earth's atmosphere for convection and boundary layer turbulence and after completion of required tests, the model code will be re-implemented for the Martian Atmosphere. The main objectives of this work is to test and simulate the fine-scale atmospheric features of the Martian atmosphere, which can be crucial in any lander or robotics mission on the Martian surface.