



Investigations of the effect of atmospheric tides on satellite temperature series

Philippe Keckhut (1), Beatrix Funatsu (2), Alain Hauchecorne (1), and Chantal Claud (2)

(1) UVSQ, IPSL, LATMOS, Guyancourt, France (keckhut@latmos.ipsl.fr), (2) LMD-IPSL, UPMC/CNRS, Ecole Polytechnique, 91128 Palaiseau, France

Temperature measurements in the stratosphere and mesosphere performed with experiments on board satellites are differently influenced by atmospheric tides according to the local time-measurements. For trend studies, it is a major issue, mainly when satellite orbits drift and then local time change as a function of time. Historical works on successive SSU experiments on board NOAA-TIROS-N satellites will be presented as well as more recent investigations concerning AMSU. This tidal issue is always critical when temperature data coming from different sources are compared including satellite validations. Some illustrations on past validations will be given. Characteristics of atmospheric temperature tides were measured using continuous lidar observations at several locations showing methodological observation difficulties and also differences with numerical models.