



On the retrievals of temperature in the Martian atmosphere in presence of scattering on the atmospheric dust

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Results of numerical experiments on temperature retrievals in the Martian atmosphere are presented. The simulated spectra were computed for models including realistic scattering on the atmospheric dust. Two sets of temperature retrievals were conducted. In the first set, the scattering on atmospheric dust was ignored, and the temperature weighting functions were computed using analytic solutions of the forward radiative transfer (RT) equation for the blackbody atmosphere. In the second set of retrievals, the scattering on atmospheric dust was taken into account, and the temperature weighting functions were computed using numerical solutions of the forward and adjoint RT equations. The results of both sets of retrievals are compared and differences between them are discussed.