

Estimation of air-temperature profile with Aqua/AIRS data on the troposphere boundary

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By means of traditional method for estimation of perpendicular distribution of the air-temperature from the sounding data, such as Bayesian optimal estimation, it is difficult to estimate accurately air-temperature on troposphere boundary due to its sharp variation. To solve the problem, a method of simulated annealing is introduced into retrieval process in order to obtain a global optimum of air-temperature on the troposphere boundary. Based on a simulated measurement in MODTRAN4.0, an estimated accuracy of air-temperature profile by means of the proposed method is higher than that by the traditional method.