

Retrieval of cloud properties from ADEOS-II data

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It is well known that cloud-microphysics properties are necessary on a global scale in order to estimate the Earth's radiation budget. Recently several algorithms for cloud retrieval as thermodynamic phase, effective radius of cloud particles, optical thickness and so on, have been proposed based on the radiance in the visible and infrared wavelengths.

POLDER sensor on board the satellite ADEOS and ADEOS-II has observed both of radiance and polarization of reflected light from clouds. Furthermore the POLDER observes one target from multi (up to 14)-directions. It is shown here that POLDER's multi-directional polarization data is available to detect thermodynamic phase of cloud top. That is to say, polarized radiance is very useful to classify the water cloud from ice cloud. On the other hand, the GLI sensor on ADEOS-II, which was operating from April to October in 2003, has 36 spectral bands from visible to infrared wavelengths with high spatial resolution. The fine images over the wide spectral range given by GLI are greatly expected for cloud retrieval.

First of all, the obtained global map of cloud properties from POLDER are compared with those from GLI. This work intends to improve the retrieval algorithm for cloud by combining both characteristics of POLDER and GLI.