



Comparison of Global Cloud Climatologies

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An analysis was carried out to intercompare several up-to-date cloudiness datasets including satellite data (IS-CCP D2, UW HIRS, Patmos-X, MODIS, PARASOL, SCIAMACHY) and surface observations (EECRA, CRU, ICOADS) as well as reanalyses data (NCEP/NCAR, NCEP/DOE, ERA-40, ERA-Interim, JRA-25) and global climate models simulations (CMIP3) in terms of global, zonal and regional values of cloudiness.

The amount of global annual mean cloudiness (*GAC*) from different observations is about $2/3$ in average. It reaches $3/4$ for certain data. The amount of *GAC* is estimated between $1/2$ and $3/5$ over land and about $7/10$ over ocean. According to all observations clouds amount in the Southern Hemisphere is larger than in the Northern Hemisphere with maximum in summer and minimum in winter.

The amount of *GAC* according to reanalyses is evaluated between $1/2$ and $3/5$. According to model simulations the amount of *GAC* is estimated in a wide range from $1/2$ up to $3/4$ with $3/5$ as ensemble mean. On the whole, reanalyses and model simulations produce less amount of *GAC* than observations.

The largest distinctions between different satellite data are noted over regions with high albedo, in particular over polar regions and subtropical deserts. Major distinctions between different reanalyses data are noted over the eastern boundary ocean currents.