

DMSP -SSM/I - Total Column of Water Vapor - Atlantic and Africa - 0.25

General information

Dataset name:	DMSP -SSM/I - Total Column of Water Vapor - Atlantic and Africa - 0.25
Created on:	2016-11-29
Useful in the framework of:	OPERATIONAL-DATA > Satellite products
Purpose:	<p>The SSM/I geophysical dataset consists of data derived from observations collected by SSM/I instruments carried onboard the DMSP series of polar orbiting satellites. These satellite are numbered: F08 SSM/I Jul 1987 to Dec 1991 F10 SSM/I Dec 1990 to Nov 1997 F11 SSM/I Dec 1991 to May 2000 F13 SSM/I May 1995 to present F14 SSM/I May 1997 to present F15 SSM/I Dec 1999 to present These satellites operate in a near-polar sunsynchronous orbit at a height of about 850 km and provide global coverage roughly twice daily. These satellites are similar to the NOAA series but carry different sensors. The SSM/I is a microwave radiometer employing a conical scan with the following seven channels: 19v, 19h, 22v, 37v, 37h, 85v and 85h GHz. The spot size varies from about 50km for the 19 GHz channels to about 15 km for the 85 GHz channels. The SSM/I is primarily used to estimate various geophysical properties of the Earth and/or atmosphere. These include total columnar atmospheric precipitable water, ocean surface wind speed, sea ice concentration, etc. The products are estimated only over ocean. Microwave emissivities for land surfaces vary over a significant range (.50 -.98) depending on moisture content of the soil, vegetation type, and snow and ice cover, while for ocean surfaces the range is more restricted (.40 -.50) and depends on salinity, surface roughness, foam, and sea surface temperature. Thus, over land, the signal originating from atmospheric water vapor can be severely masked by the potentially large and highly variable surface emission term. For this reason, reliable estimates of the total precipitable water are normally restricted to oceanic regions; therefore, no water vapor retrievals were attempted over continental areas in the SSM/I data sets. The Special Sensor Microwave/Imager (SSM/I) data products are produced as part of NASA Pathfinder Program. Remote Sensing Systems (RSS) generates SSM/I data products using a unified, physically based algorithm to simultaneously retrieve ocean wind speed (at 10 meters), water vapor, cloud water, and rain rate. This algorithm is a product of 15 years of refinements, improvements, and verifications. While the algorithms have evolved over time, a substantial background to the radiative transfer function used to derive the geophysical parameters is described in two papers (See Reference). The daily files produced by RSS consist of SSM/I geophysical products mapped to a regular grid (0.25 degree) complete with data gaps between orbits. Two maps exist for</p>

each parameter, one of ascending orbit segments and the other of descending orbit segments. The originating SSMI products extracted from the originating center RSS (see Data set citation) have been converted by IPSL data center into the netcdf format for the AMMASAT database (See Data center information). No interpolation has been made. This DIF describes the dataset available at IPSL.

Contact(s)

Monge Jean-louis - LMD - monge@lmd.polytechnique.fr (PI or Lead scientist)

Instrument

Satellite:	DMSP
Instrument:	SSMI
Instrument type:	MR > MICROWAVE RADIOMETER

Parameter

Total Column of Water Vapor

Parameter name:	Total Column of Water Vapor
Parameter keyword:	Atmosphere > Atmospheric Water Vapor

Coverage

Temporal coverage

Date begin (yyyy-mm-jj):	1987-07-09
Date end (yyyy-mm-jj):	2010-12-27

Geographic coverage

Data resolution

Temporal resolution:	0000-00-01 00:00:00
Latitude resolution:	0.25
Longitude resolution:	0.25

Data use information

Use constraints:	Public data
Data policy:	AMMA data policy
Original data format(s):	NetCDF