

ECMWF-JCSDA Workshop on Assimilating Satellite Observations of Clouds and Precipitation into NWP Model

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History of cloud and precipitation assimilation at ECMWF

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

ARM cloud radar 1D-Var

NEXRAD 1D+4D-Var

NEXRAD 4D-Var

OPERA 1D+4D-Var

OPERA 4D-Var

Ground-based radar retrievals

TMI 1D+4D-Var

TMI+SSM/I 1D+4D-Var

PR 1D+4D-Var

Cloudsat 1D+4D-Var

Satellite retrievals

28.6.2005

SSM/I 1D+4D-Var

SSM/I+TMI+AMSR-E 1D+4D-Var

10.3.2009

SSM/I+AMSR-E 4D-Var

Satellite microwave radiances

AMSU-A/HIRS 1D-Var

SEVIRI 4D-Var

8.9.2009

HIRS/AIRS/IASI 4D-Var*

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Satellite infrared radiances

MODIS 4D-Var

Other satellite products

(* with cloud sink variables)

Operational implementation