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Conventional Upper-air Observations for the ERA-PreSAT and ERA-SAT pilot reanalysis

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This presentation focuses on conventional upper-air observations as used in the pilot reanalyses that are conducted at ECMWF within the ERA-CLIM project.

This embraces historical observations from kites, pilot balloons, aircraft and radiosondes from the NCAR archives, ECMWF holdings and the Comprehensive Historical Upper-Air Network (CHUAN).

These historical data banks have been imported at ECMWF into a uniform observation database, called ODB. This database serves the ECMWF assimilation system and is very flexible with respect to new observables, platforms and vertical levels.

Some challenges regarding the distinction between original observables and derived quantities, sonde type identification, duplicates, and homogenisation based on variational bias correction, are discussed.

The upper-air data are used in ERA-PreSAT, which embodies a few relatively short reanalyses for some key periods. The set-up and preliminary results will be presented.