Enhanced Data Coverage in Version 2 of the Integrated Global Radiosonde Archive

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IGRA version 1

- Released in 2005
- 1538 stations
- $33 \times 10^6$ soundings
- 11 data sources
- 1 daily update
- 2 access points
  - FTP
  - NOMADS
IGRA version 1
Publications


Trends in Precipitable Water

Northern Hemisphere

Annual

(0.45 mm dec\(^{-1}\))
Why IGRA version 2?

- To enhance coverage before 1963 and in data-sparse regions
- To include:
  - Ships
  - Additional pilot balloon observations
  - Relative humidity
  - Recently digitized data
  - Data sets used in reanalyses
- To simplify data integration algorithms
New Source Data Sets

- 92 data sets considered
- 42 collections reformatted (major effort)

Highlights
- MIT and C-CARDS from NCAR
- Bronnimann acquisitions
- CDMP data for U.S. and Africa
- French West African data
- Additional China data from NCDR & NCAR
- Russian Ice Island and other marine data
IGRA v2 vs IGRA v1 Stations By Year
IGRA v2 & IGRA v1 Coverage - 1925

- IGRA v1 station
- Added in IGRA v2
IGRA v2 & IGRA v1 Coverage – 1950

- IGRA v1 station
- Added in IGRA v2
IGRA v2 & IGRA v1 Coverage – 1975

- IGRA v1 station
- Added in IGRA v2
IGRA v2 & IGRA v1 Coverage – 2000

- IGRA v1 station
- Added in IGRA v2
IGRA v2 Status and Plans

- Currently in development
- Acquisition/reformatting (2010)
- Preprocessing/standardization (2011)
- Integration (station matching) (2012)
- QA and update system (2013)
IGRA v2 Spatial Coverage Over Time

- IGRA v2 station

1945

1946
IGRA v2 Spatial Coverage Over Time

- IGRA v2 station

1957

1958