

Network for the Detection of Atmospheric Composition Change

Exploring the Interface between Changing Atmospheric Composition and Climate change

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Network objectives

- Long-term monitoring of atmospheric variables for detection and quantification of variabilities and trends
- Establishment of scientific links and feedbacks between climate change and atmospheric composition
- Support to scientific field campaigns
- Support to satellite calibration and validation
- Support to model validation

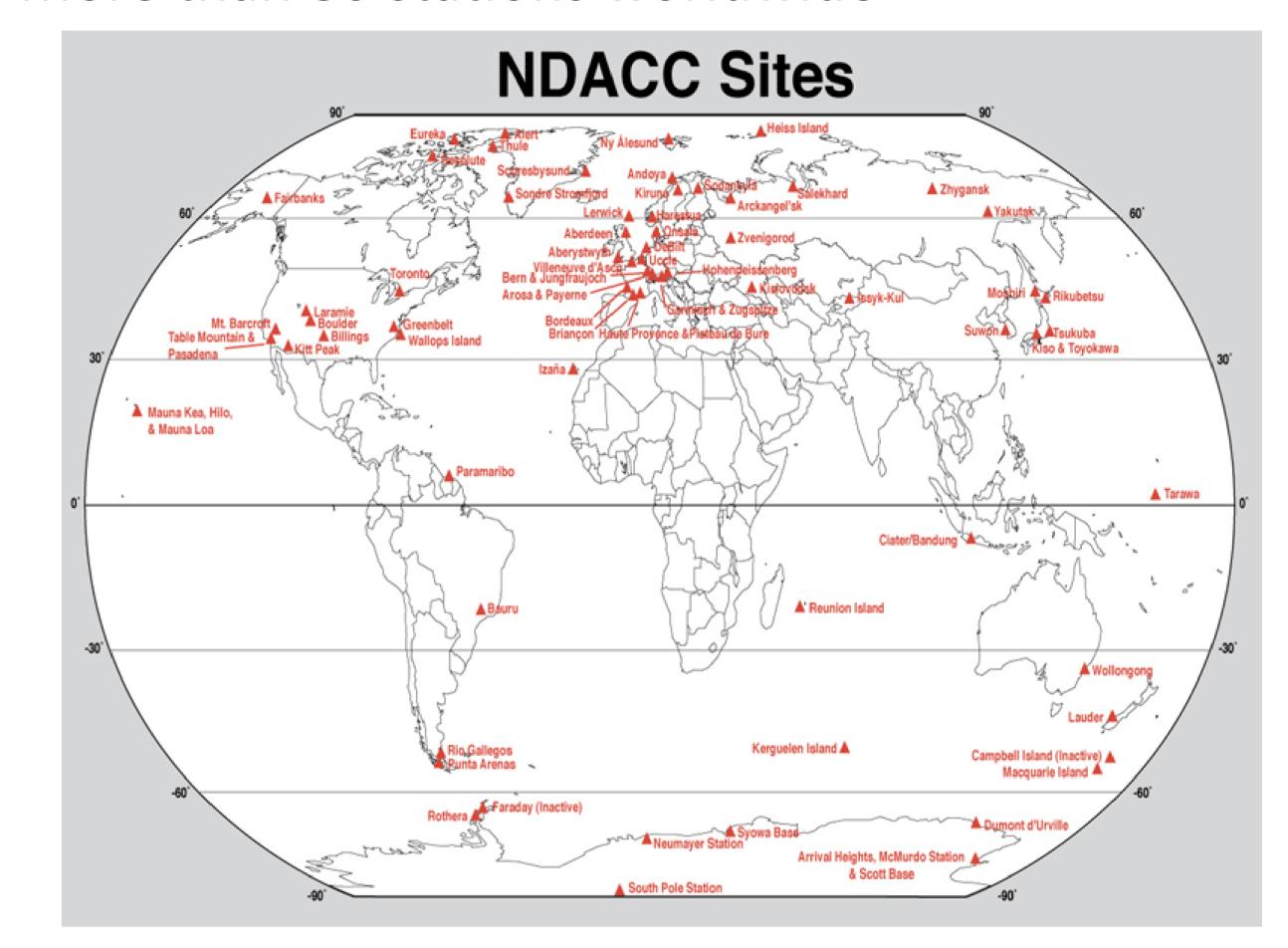
Network organisation

- Steering Committee, consisting of
 - 2 co-chairs + executive secretary
 - Working Groups co-chairs and Ex-Officio and Peer Members
- Working Groups and Science Teams



Network status

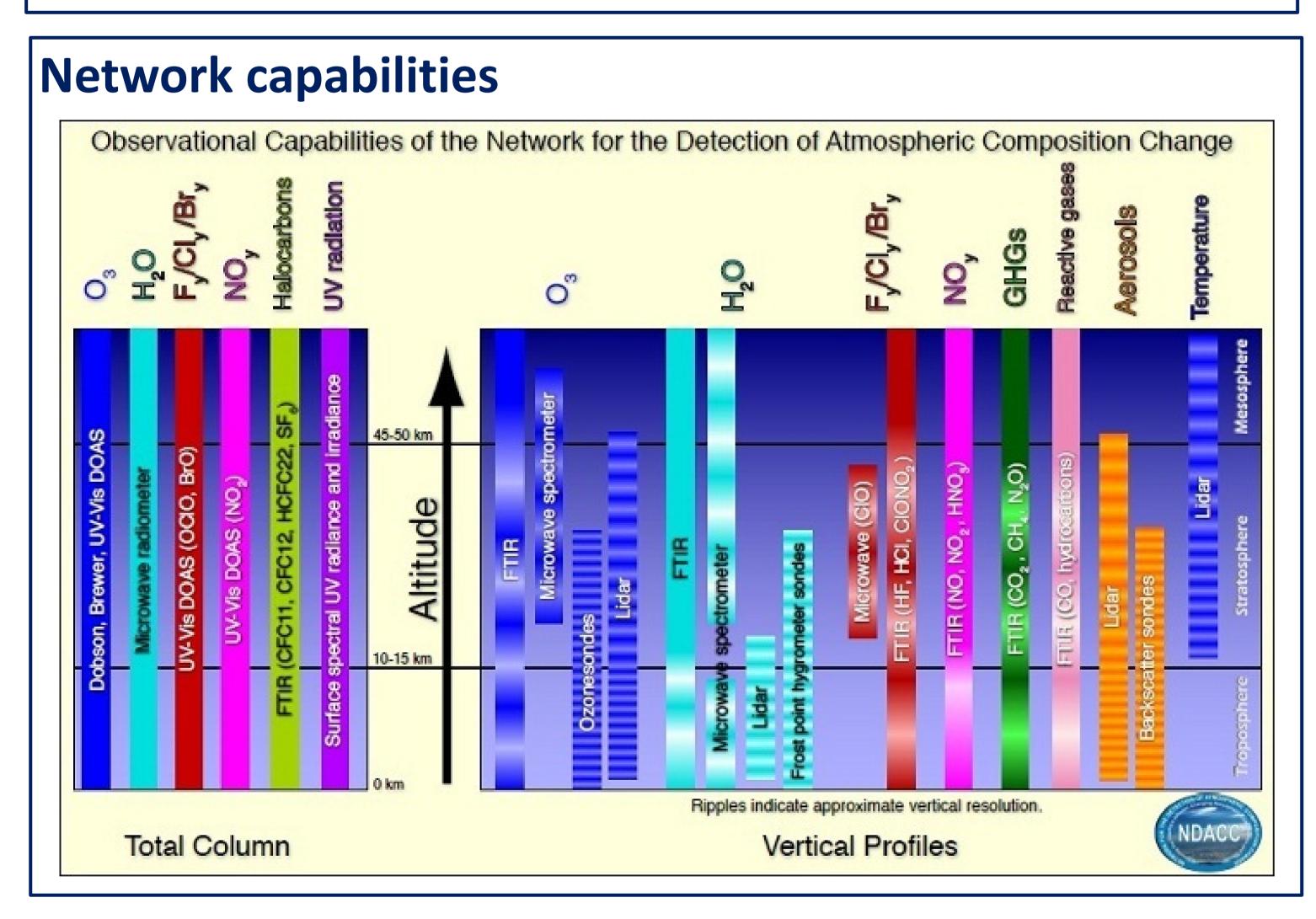
- Operational since $1991 \Rightarrow 25$ years in 2016
- More than 80 stations worldwide



- Central data archiving at ftp.cpc.ncep.noaa.gov/ndacc
- Instrument operations and data quality must comply with data protocols established by Working Group

Long-term monitoring: example of O₃ profiles at Bern

VMR (ppm) 0.1

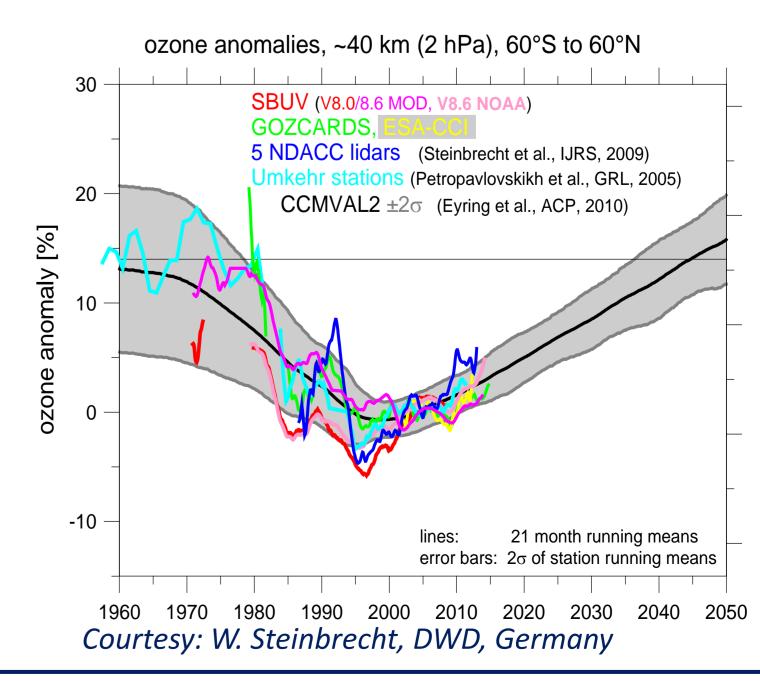


Green boxes indicate ranges where trend is significatif Courtesy: N. Kaempfer et al., Univ. Bern, Switzerland Contribution to SI2N (SPARC/IOC/IGACO-O3/NDACC) Initiative

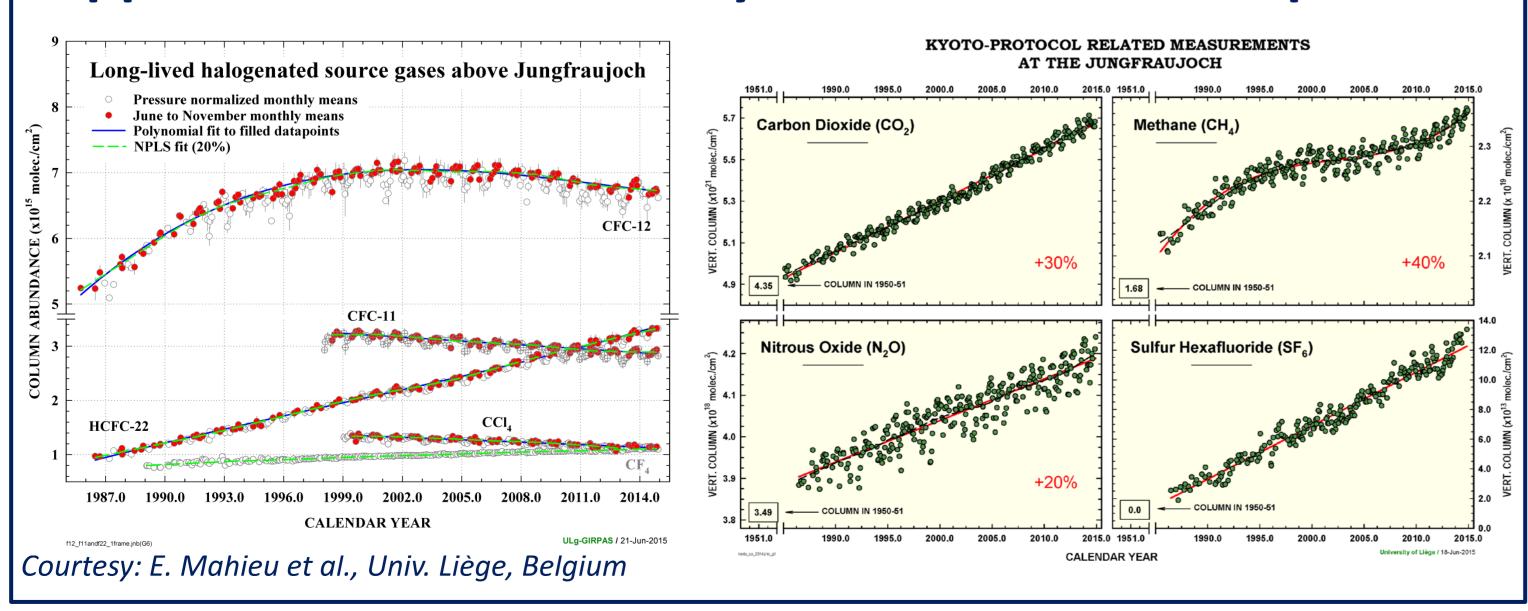
 What happened to vertical distribution of stratospheric ozone globally and in different regions, over the last 40+ years?

Evidence of 'recovery'?

O₃ at Bern, Switzerland



Support to Montreal and Kyoto Protocols: examples



NDACC collaborates with TCCON or Total Carbon Column Observing Network

TCCON is a network of FTIR spectrometers for the measurement of greenhouse gases with high precision & accuracy (better than 1 ppm for CO₂ and 5 ppb and 7 ppb for CH₄)

www.ndacc.org www.tccon.caltech.edu