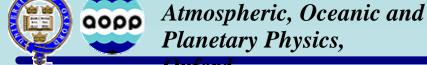


# **MIPAS Occupation Matrix Statistics**

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### **Definitions**

- Occupation Matrices (OMs) are the set of microwindows/tangent altitude used to retrieve the L2 profiles.
- ? 001-006 Nominal OMs (according to latitude bands)

OM	Latitude Band	No. Profiles	% Total
001	90S-65S	10	14
002	65S-20S	18	25
003	20S–Equ	8	11
004	Equ-20N	8	11
005	20N–65N	18	25
006	65N–90N	10	14

- ? 015-068 Missing sweep OMs
- ? **112-568 Missing band** OMs
- ? 612-660 Cloud contamination OMs (although cloud detection is not yet implemented)

## Monthly analysis (Jul02-Feb03)

- ? Discrepancy between the number of species profiles and the number of pT profiles
  - <sup>7</sup> HNO<sub>3</sub> and NO<sub>2</sub> more often, sometimes all constituents
- ? No explicit occupation matrix label in the L2 data
  - the OM data sometimes do not match any of the delivered OMs (unidentified OMs for H<sub>2</sub>O and O<sub>3</sub>, mainly)
- ? High frequency of corrupt L1 data for 24 and 27 km (5% from October onwards)
- ? Reduction in southern high-latitude retrievals using OM-001
  - Example of 90S-65S missing data from January
- ? Fewer CH<sub>4</sub> retrievals than other species, 12 km C-band (OM-312) often flagged as currupt



## Monthly analysis (Mar03-18May03)

- ? **NO** more discrepancy between the number of species profiles and the number of pT profiles
- <sup>?</sup> Still unidentified OMs (for H<sub>2</sub>O and O<sub>3</sub>)
- ? Reduction of OM-004 and OM-003 (20S-20N) to account for ~4-5% of retrievals
- ? Reduction of NO<sub>2</sub> retrievals to ~70-80%
- ? Increase of CH<sub>4</sub> retrievals (~90%), OM-312 used ~**0.1%**
- ? Increase of OM-618 (-627 for pT) to account for 3-5% of retrievals
- ? 11-18 May03: July 2001 version of OMs (all species), for \*NPDE\* data
- <sup>2</sup> March split in March\_A (before updates, 15<sup>th</sup> March ) and March\_B