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# **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
  - ?  $\text{HNO}_3$  and  $\text{NO}_2$  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  $\text{H}_2\text{O}$  and  $\text{O}_3$ , 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  $\text{CH}_4$  retrievals than other species, 12 km C-band (OM-312) often flagged as corrupt



## Monthly analysis (Mar03-18May03)

- ? **NO** more discrepancy between the number of species profiles and the number of *pT* profiles
- ? **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**
- ? **March split in March\_A (before updates, 15<sup>th</sup> March ) and March\_B**