

Data Protocol for MICS-Asia Phase II

April 2004

The following issues will be focused for the model intercomparison study:

- Spatial distribution of monthly averaged concentrations.

- SO₂, NO, NO₂, HNO₃, PAN, NH₃, O₃, sulfate, nitrate, ammonium, SO₄²⁻ in precipitation, NO₃⁻ in precipitation and NH₄⁺ in precipitation.
- In the layer including the height of near surface, 300, 1500, 3000 and 6000 meters above ground level.

- Horizontal distribution of monthly accumulated depositions.

- Dry deposition: SO₂, HNO₃, NH₃, O₃, sulfate, nitrate and ammonium
- Wet deposition: SO₄²⁻, NO₃⁻ and NH₄⁺

- Comparison with daily averaged concentration at the monitoring sites of EANET and LTP.

- SO₂, NO, NO₂, HNO₃, O₃, sulfate and nitrate

Participants are also expected to provide following data of simulation for vertical profile:

Date: 7, 8, 9 and 11 March 2002

Time: 1300, 1400, 1500, 1600 and 1700 LST (UT + 9 hours)

Height: 300, 500, 700, 1000, 1500, 2000, 2500 and 3000 meters above ground level.

Domain: 124 - 127E, 34 - 38N

Species: SO₂, NO, NO₂ and O₃

It is requested to report results *in text format* according to the data layouts shown in Table 1, Table 2 and Table 3. Every participant has to report results in longitude/latitude with 0.5 degree. A modification of domain size, species and format is possible, but the modified layout is required.

Participants should report model results at least *by the end of June* for a preliminary analysis. It is requested to burn model results onto a CD-R and send it to a contact person of ADORC (address is shown at the end).

It is highly recommended for the model intercomparison that all modeling teams use the same standard emissions. If this requirement could be impossible for model performance, it is also requested to report its own emission data.

Table 1 Data layout for daily averaged concentrations

Column	Data format	Reference
Latitude	F7.2	-14.75 ~ 59.75 (15S~60N)
Longitude	F7.2	75.25 ~ 159.75 (75E~160E)
ROWS	I4	1 ~ 150 (from North to South)
COLS	I4	1 ~ 170 (from West to East)
Date	I9	yyyymmdd ^{*1}
Height	I5	0, 300, 1500, 3000 and 6000 (m) ^{*2}
SO ₂	F10.3	(ppbv)
NO	F10.3	(ppbv)
NO ₂	F10.3	(ppbv)
HNO ₃	F10.3	(ppbv)
PAN	F10.3	(ppbv)
NH ₃	F10.3	(ppbv)
O ₃	F10.3	(ppbv)
sulfate	F10.3	($\mu\text{g}/\text{m}^3$)
nitrate	F10.3	($\mu\text{g}/\text{m}^3$)
ammonium	F10.3	($\mu\text{g}/\text{m}^3$)
SO ₄ ²⁻ in precipitation	F10.3	($\mu\text{mol}/\text{L}^3$)
NO ₃ ⁻ in precipitation	F10.3	($\mu\text{mol}/\text{L}^3$)
NH ₄ ⁺ in precipitation	F10.3	($\mu\text{mol}/\text{L}^3$)

1) yyyy: year, mm: month, dd: date

2) "0" represents near surface.

Table 2 Data layout for monthly accumulated depositions

Column	Data format	Reference
Latitude	F7.2	-14.75 ~ 59.75 (15S~60N)
Longitude	F7.2	75.25 ~ 159.75 (75E~160E)
ROWS	I4	1 ~ 150 (from North to South)
COLS	I4	1 ~ 170 (from West to East)
Month	I7	yyyymm (Year and Month)
Dry dep. of SO ₂	F10.3	(mg/m ²)
Dry dep. of HNO ₃	F10.3	(mg/m ²)
Dry dep. of NH ₃	F10.3	(mg/m ²)
Dry dep. of O ₃	F10.3	(mg/m ²)
Dry dep. of sulfate	F10.3	(mg/m ²)
Dry dep. of nitrate	F10.3	(mg/m ²)
Dry dep. of ammonium	F10.3	(mg/m ²)
Wet dep. of SO ₄ ²⁻	F10.3	(mg/m ²)
Wet dep. of NO ₃ ⁻	F10.3	(mg/m ²)
Wet dep. of NH ₄ ⁺	F10.3	(mg/m ²)

Table 3 Data layout for hourly vertical profile

Column	Data format	Reference
Latitude	F7.2	34.25 ~ 37.75 (34N~38N)
Longitude	F7.2	124.25 ~ 126.75 (124E~127E)
Hour	I5	ddhh (Date and LST)
Height	I5	300, 500, 700, 1000, 1500, 2000, 2500 and 3000(m)
SO ₂	F10.3	(ppbv)
NO	F10.3	(ppbv)
NO ₂	F10.3	(ppbv)
O ₃	F10.3	(ppbv)

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