

Fukushima Daiichi Nuclear Power Plant Transfer Coefficient Matrix: FLEXPART runs by ZAMG

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FLEXPART Version used

For the runs, FLEXPART model version 8.2-3 was used. The documentation of version 8.2 is available at <http://zardozi.nilu.no/~flexpart/flexpart/flexpart82.pdf>.

Meteorological input data

The following meteorological input data were used (in nested-grid mode):

- ECMWF global analysis data, $0.5^{\circ} \times 0.5^{\circ}$, 3 hours, 92 levels
- ECMWF $0.2^{\circ} \times 0.2^{\circ}$, 3 hours in the following domain: $114^{\circ} \text{ E} - 179^{\circ} \text{ E}$, $25^{\circ} \text{ N} - 62^{\circ} \text{ N}$, 92 levels

Run specifications

- Runs from 20110311 0 UTC to 20110401 0 UTC, every 3 hours (168 runs in total)
- Run duration: 72 hours
- Output time step: 3 hours
- Emission/release specification: duration 3 hours, strength: 1 Bq/ hour, height 0-500 m equally distributed
- Particles emitted: 302400 (4200 particles per hour simulation period)
- Model time step: flexible (Lagrangian time scale), synchronization interval 900 s
- Output grid: 0.05° from 125° E to 155° E , 28° N to 48° N , 0.5° globally, lowest model box 0-100 m

Species and Deposition

In the calculation, a total of 5 species were considered (in brackets are the names in the FLEXPART SPECIES file and the hysplit format output file, respectively)

- Passive Tracer (TRACER/NGAS)

- Deposited Gas (DEPGAS/DGAS)
- Deposited Species (DEPAER/LPAR)
- Species with weak deposition (DEPAE1/AER1)
- Species with very weak deposition (DEPAE2/AER2)

Species (Flexpart)	Species (Hysplit Output)	Dry Deposition	Wet Deposition
TRACER	NGAS	No	No
DEPGAS	DGAS	Vd=0.01 m/s	$A=1 \cdot 10^{-5}$, B=0.60
DEPAER	LPAR	Vd=0.001 m/s	$A=1 \cdot 10^{-4}$, B=0.80
DEPAE1	AER1	Vd=0.001 m/s	$A=1 \cdot 10^{-5}$, B=0.60
DEPAE2	AER2	Vd=0.001 m/s	$A=1 \cdot 10^{-6}$, B=0.60

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