



Grímsvötn – more Icelandic fun

A. Folch⁽¹⁾

Eyjafjallajökull, volcanic clouds, and aviation - one year on

Melbourne, 8 June 2011

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21 May 2011 at 19:25 UTC. Gosh, Iceland again...

Day				column height (a.s.l.)	column height (vent)
141	Sat	21-may	19:25	12	10,3
142	Sun	22-may		15 till noon 10 onwards	13.3 8.3
143	Mon	23-may		8 to 10, 9 average	7,3
144	Tue	24-may		5	3,3
145	Wen	25-may		5 pulse of 12 at 0200UTC	3.3 pulse 10.3
146	Thu	26-may		not detected	
147	Fri	27-may			
148	Sat	28-may			
149	Sun	29-may			
150		30-may		end of eruption	



IMO provides almost daily reports

Grímsvötn volcano

Status Report: 17:00 GMT, 22 May 2011

Icelandic Meteorological Office and Institute of Earth Sciences, University of Iceland

Compiled by: Steinunn S. Jakobsdóttir, Gunnar Sigurðsson, Óli Pór Árnason, Magnús Tumi Guðmundsson, Ingibjörg Jónsdóttir, Þórdís Högnadóttir, Björn Oddsson and Bergþóra S. Þorbjarnardóttir.

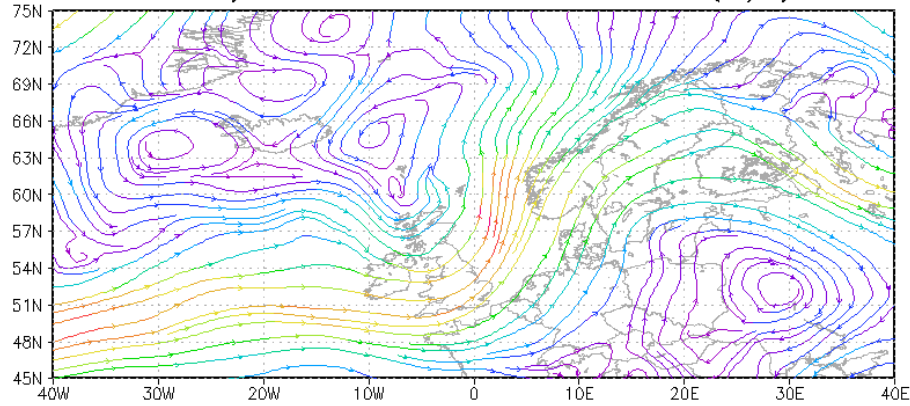
Based on: IMO seismic monitoring; IES-IMO GPS monitoring; IMO hydrological data; information from flights 9-11h; weather radar; ashfall reports; UK Met Office ATDnet; MODIS satellite images.

Eruption plume:

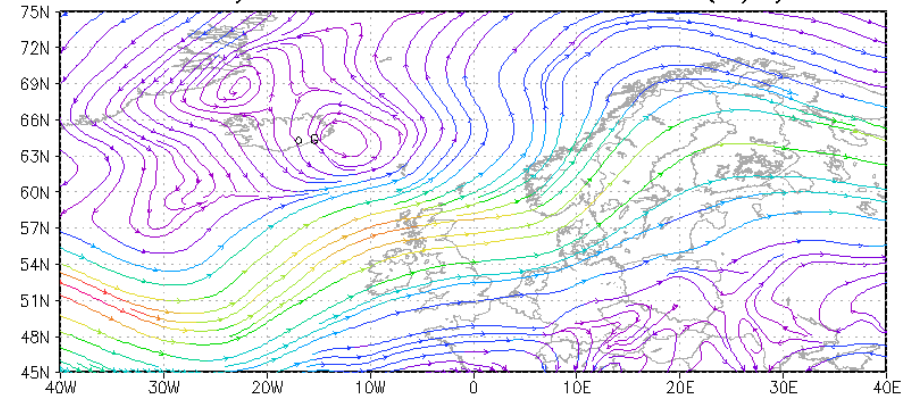
Height (a.s.l.): The ash plume reached heights of 15 to 19 km last night and this morning. In the last two hours, the plume has reached heights of 14 to 15 km, but from noon until 15:00 hrs (GMT), the plume reached heights closer to 10 kilometers.

GFS forecast (21 May)

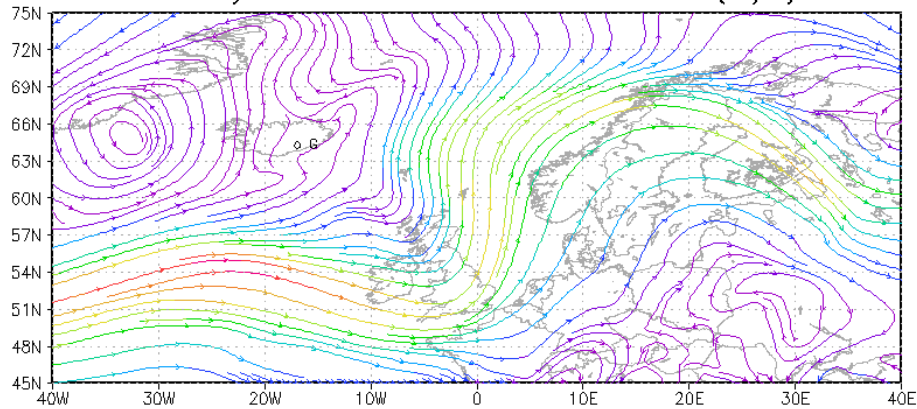
22may2011 at 06:00 Wind at z=05000 (m/s)



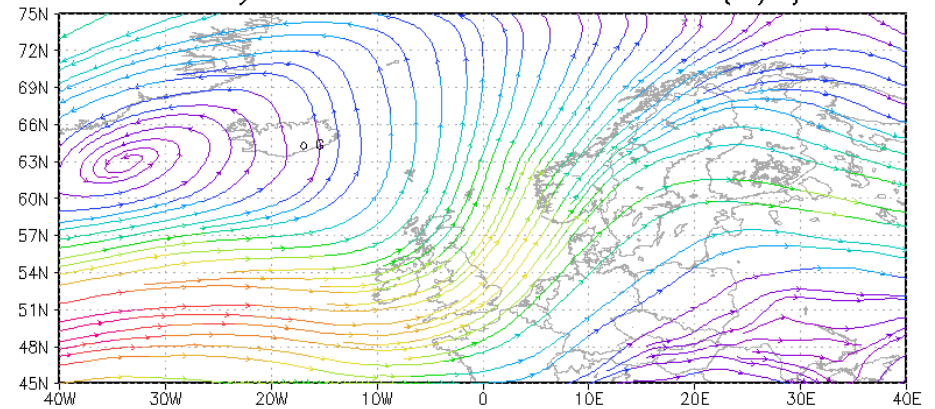
21may2011 at 00:00 Wind at z=10000 (m/s)



22may2011 at 06:00 Wind at z=10000 (m/s)



22may2011 at 06:00 Wind at z=15000 (m/s)



Fall3d configuration

METEO DATA TIME RANGE

Initial time : 21 MAY 2011 at 00 h 0000 s
Final time : 24 MAY 2011 at 00 h 0000 s
Meteo coverage : 72.0 h (259200 sec)
Time lag : 0 days (0 sec)

MESH

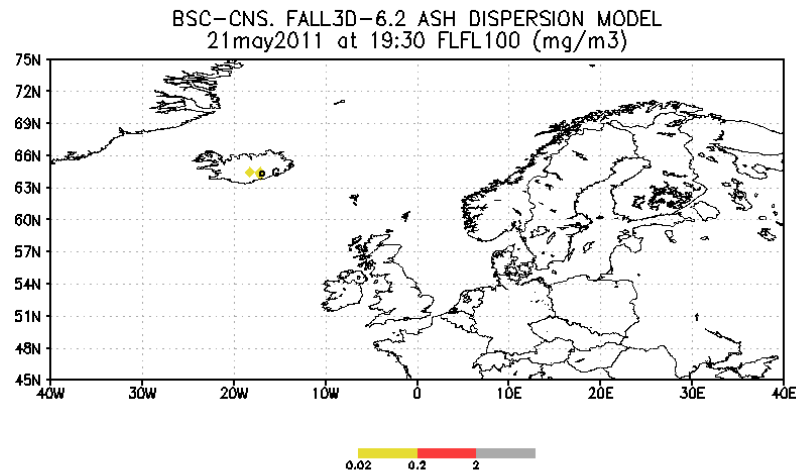
System of coord. : LON-LAT
Bottom-left corner : (-40.0000 45.0000)
Top-right corner : (40.0000 75.0000)
Number points x : 141
Number points y : 61
Grid incr. (deg) : 0.57143
Grid incr. (deg) : 0.50000
Min. topography : -14.6
Max. topography : 3185.9
Max. z domain : 18185.9
Number z-levels : 16

GRANULOMETRIC DISTRIBUTION

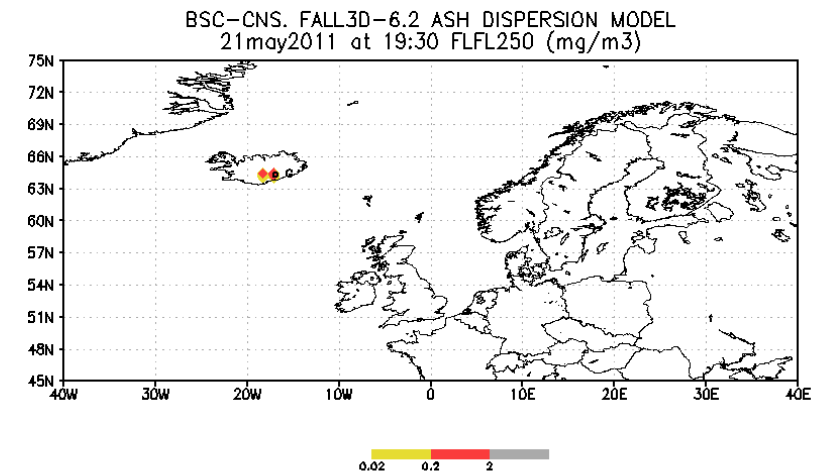
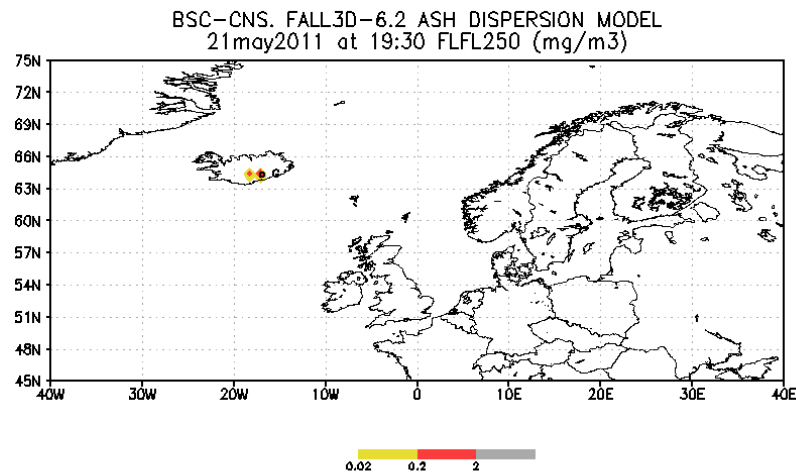
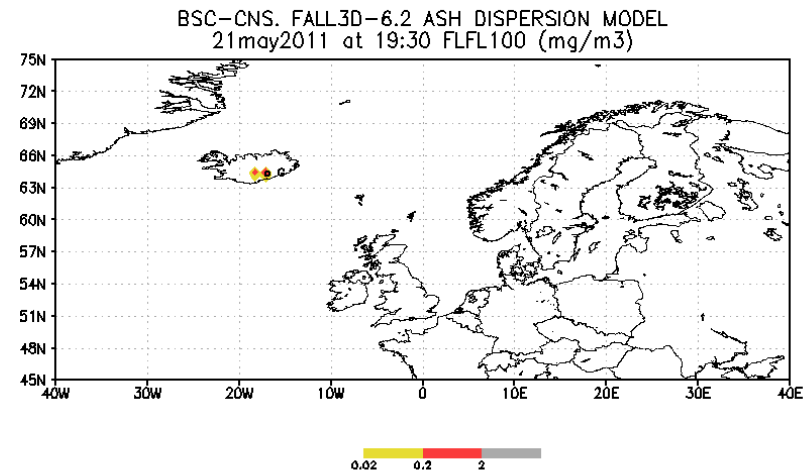
NUMBER OF PARTICLE CLASSES : 7
DIAMETER (mm) : 16.0000 4.0000 1.0000 0.2500 0.0625 0.0156 0.0039
PHI (-) : -4.00 -2.00 0.00 2.00 4.00 6.00 8.00
DENSITY (kg/m3) : 1000.00 1200.00 1400.00 1600.00 1800.00 2000.00 2200.00
SPHERICITY (-) : 0.90 0.90 0.90 0.90 0.90 0.90 0.90
MODEL FACTOR (-) : 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PERCENTAGE (in %) : 0.0 0.4 8.7 40.9 40.9 8.7 0.4
SUM (in %) : 100.0

Fall3d forecast for 21-23 May. Which column height??

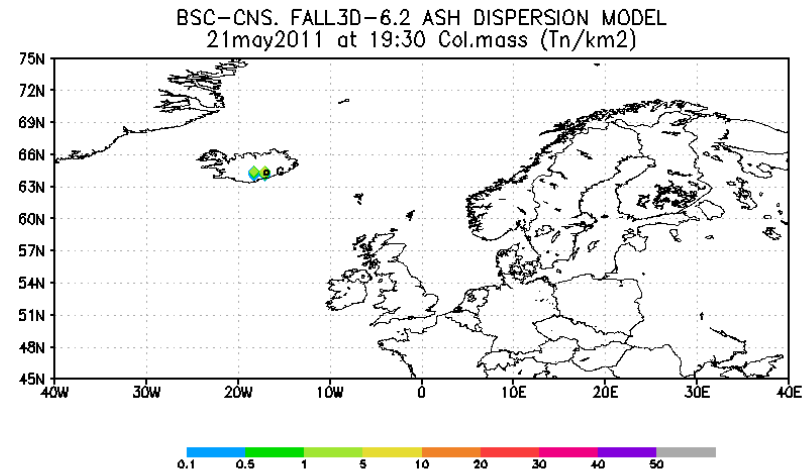
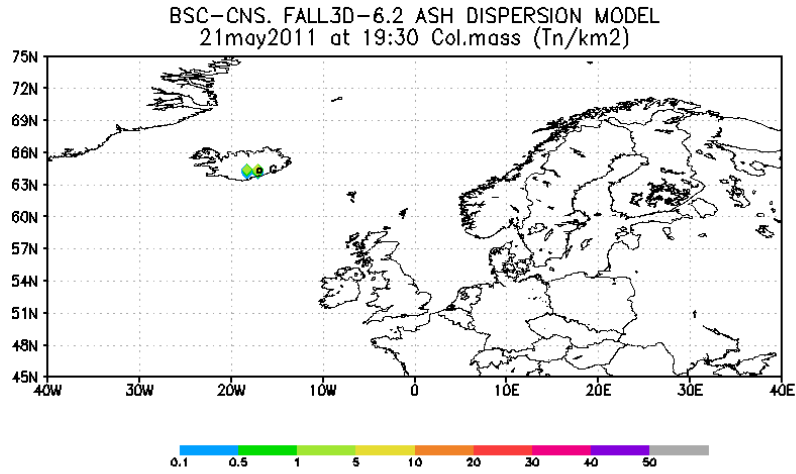
8 km



12 km



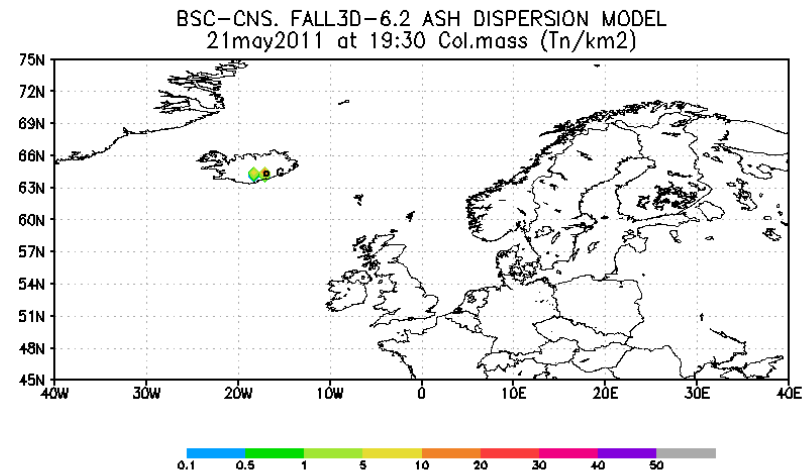
Fall3d forecast for 21-23 May. Different vertical mass distribution



Point

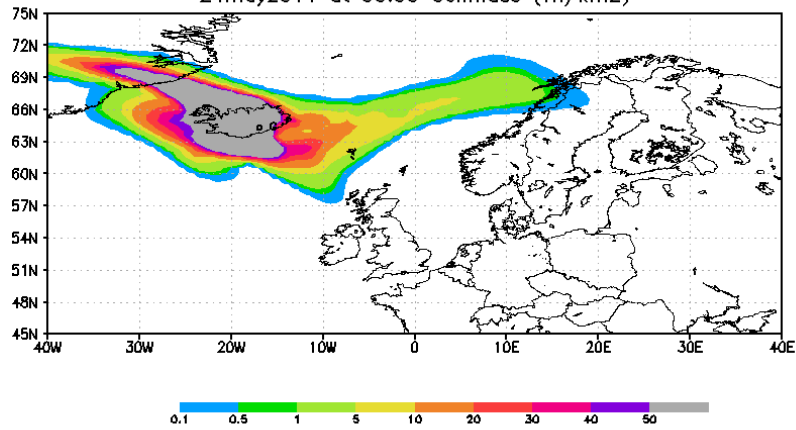
Suzuki

Plume

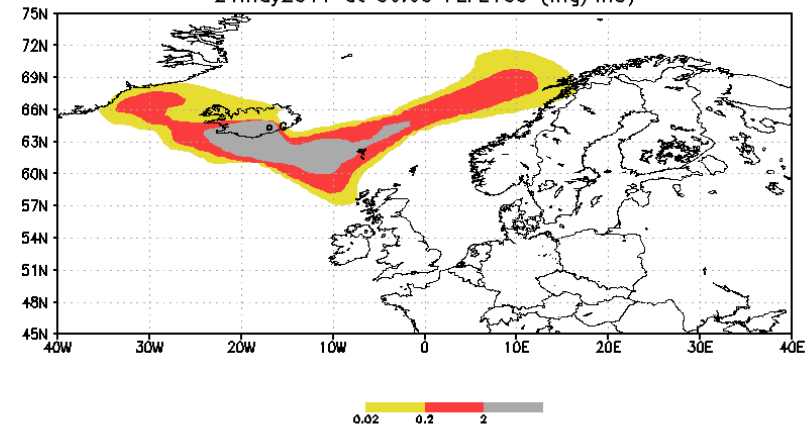


Fall3d forecast for 21-26 May. Restart strategy...

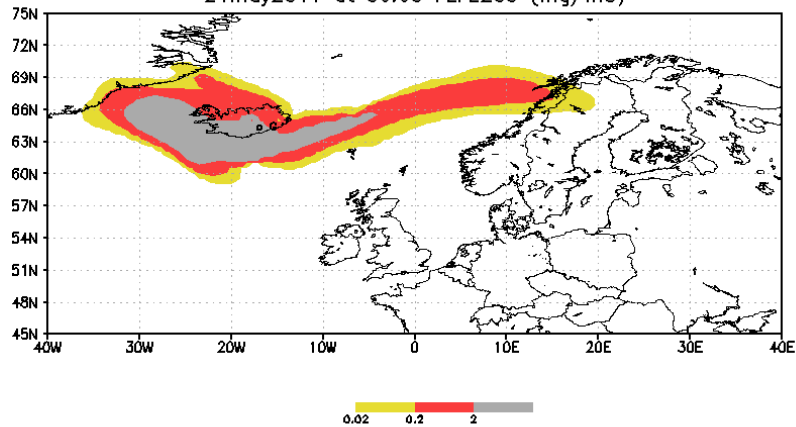
BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
24may2011 at 00:00 Col.mass (Tn/km²)



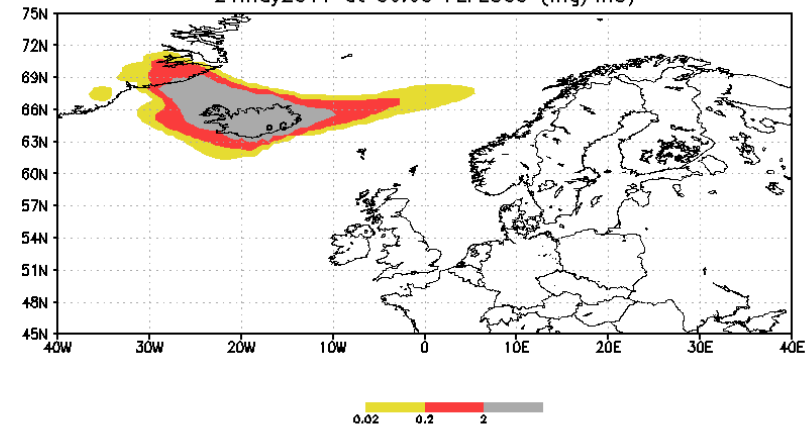
BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
24may2011 at 00:00 FLFL100 (mg/m³)



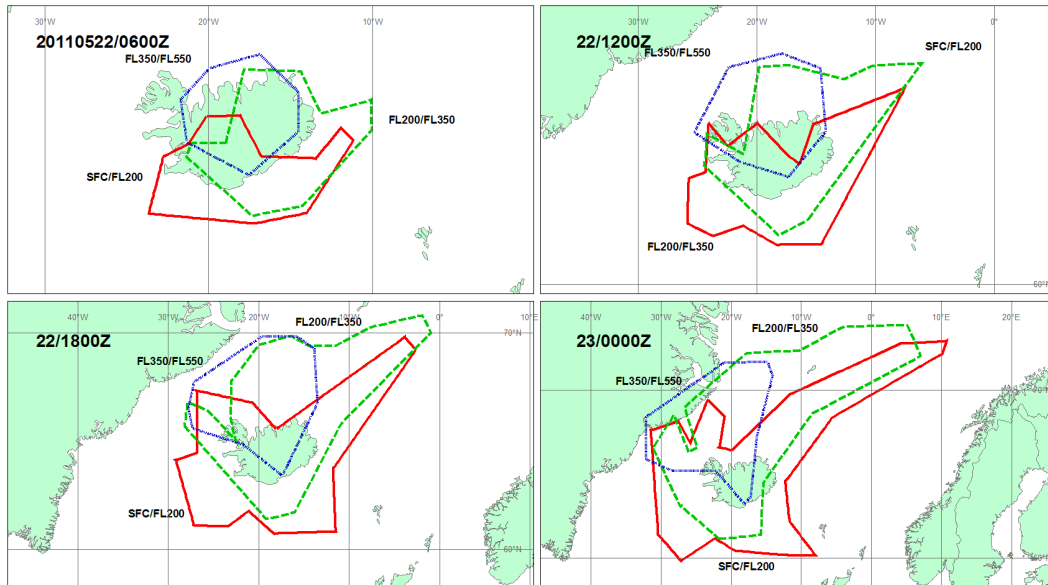
BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
24may2011 at 00:00 FLFL200 (mg/m³)



BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
24may2011 at 00:00 FLFL300 (mg/m³)



London VAAC NAME model results (graphic advisories)

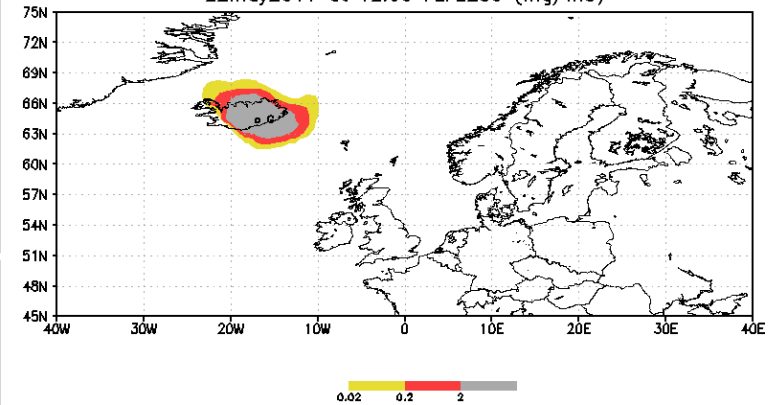


VA ADVISORY
 DTG: 20110522/0600Z
 VAAC: LONDON
 VOLCANO: GRIMSVOTN 1703-01
 PSN: N6425 W01720
 AREA: ICELAND

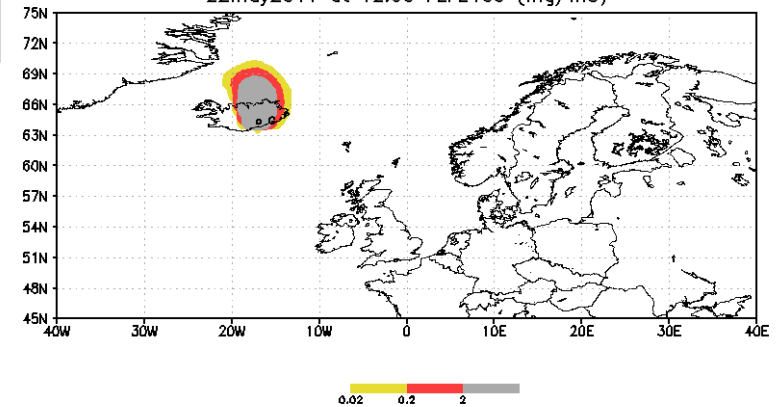
SUMMIT ELEV: 1725M
 ADVISORY NR: 2011/004
 INFO SOURCE: ICELANDIC MET OFFICE
 AVIATION COLOUR CODE: UNKNOWN
 ERUPTION DETAILS: GRIMSVOTN ERUPTED AROUND 20110521/1900Z. AT 20110522/0200Z, PLUME HEIGHT ESTIMATED BY RADAR 15-17KM.

RMK: PLUME CLEARLY VISIBLE ON IR AND ASH IMAGERY. WEB CAM SHOWED ASH VISIBLE EARLIER AND HEAVY ASHFALL REPORTED NEAR VOLCANO. AT 21/2300Z, PILOT REPORTED EASTERN EDGE OF ASH NEAR 12W. EXTREME LIGHTNING ACTIVITY DETECTED BY ATDNET SYSTEM OF UK METOFFICE, 7000 BETWEEN 1900Z AND 0100Z.
 NXT ADVISORY: 20110522/1200Z

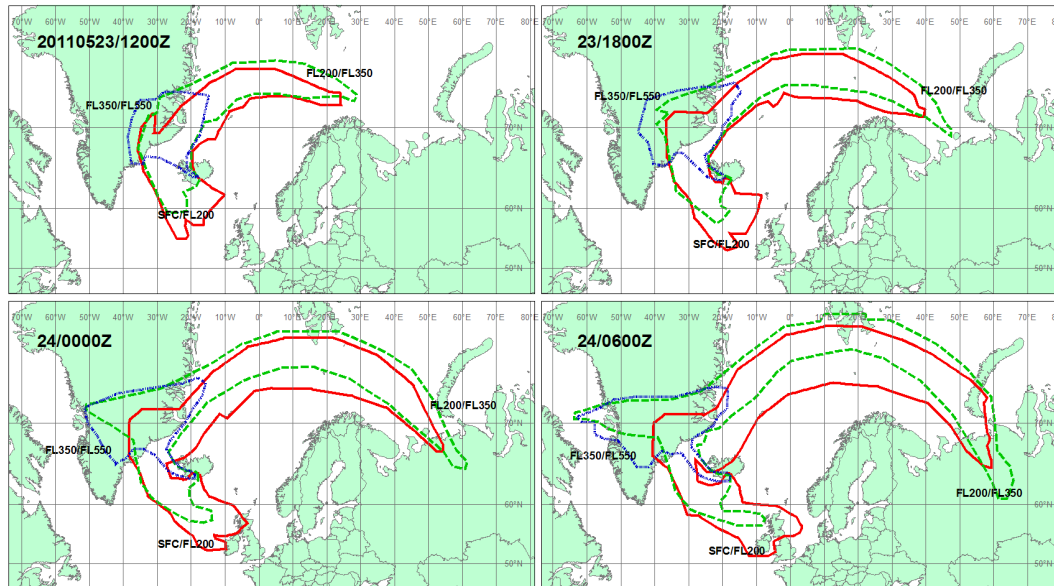
BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
 22may2011 at 12:30 FLFL250 (mg/m3)



BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
 22may2011 at 12:30 FLFL400 (mg/m3)



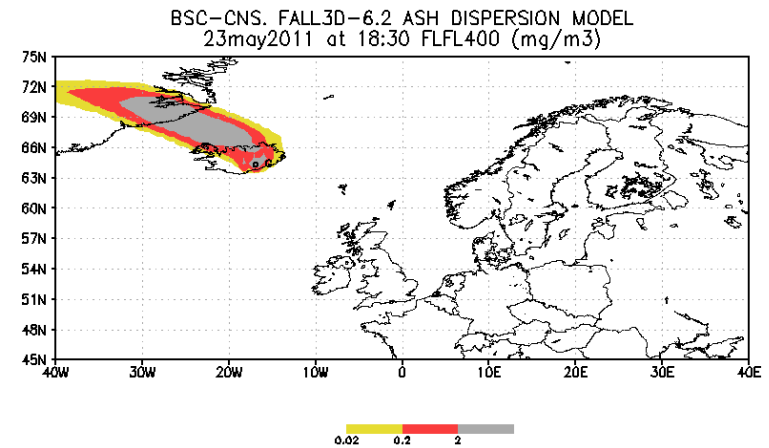
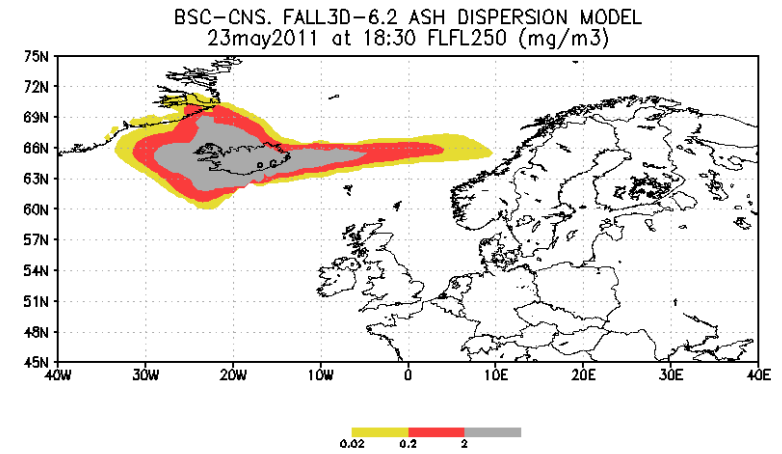
London VAAC NAME model results (graphic advisories)



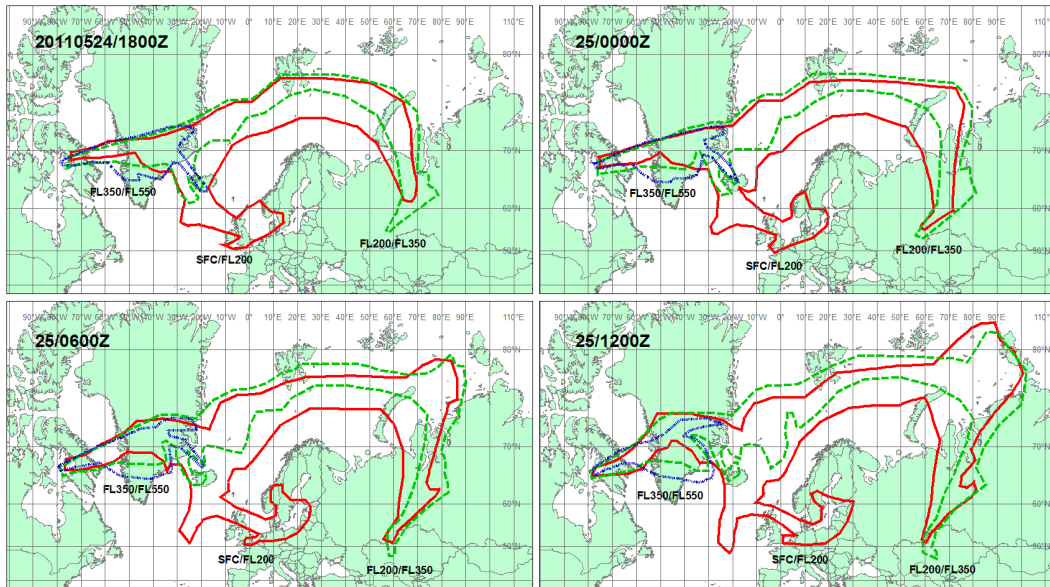
VA ADVISORY
DTG: 20110523/1200Z
VAAC: LONDON
VOLCANO: GRIMSVOTN 1703-01
PSN: N6425 W01720
AREA: ICELAND

SUMMIT ELEV: 1725
ADVISORY NR: 2011/009
INFO SOURCE: ICELANDIC MET OFFICE
AVIATION COLOUR CODE: RED
ERUPTION DETAILS: ERUPTION CONTINUING

RMK: PLUME HT ESTIMATED FROM RADAR AT BETWEEN 8KM AND 12KM
NXT ADVISORY: 20110523/1800Z



London VAAC NAME model results (graphic advisories)

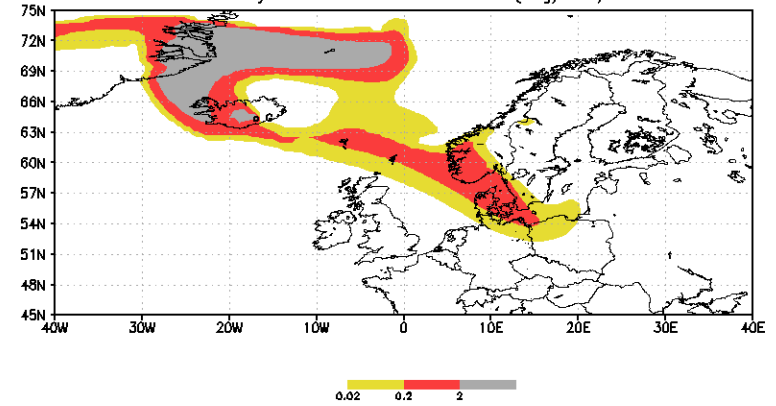


VA ADVISORY
DTG: 20110524/1800Z
VAAC: LONDON
VOLCANO: GRIMSVOTN 1703-01
PSN: N6425 W01720
AREA: ICELAND

SUMMIT ELEV: 1725m
ADVISORY NR: 2011/014
INFO SOURCE: ICELANDIC MET OFFICE
AVIATION COLOUR CODE: RED
ERUPTION DETAILS: ERUPTION CONTINUING

RMK: CURRENT ERUPTION HEIGHT ESTIMATED BY ICELAND MET OFFICE FROM RADAR TO BE AROUND 5KM
NXT ADVISORY: 20110525/0000Z

BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
25may2011 at 00:00 FLFL250 (mg/m³)



BSC-CNS. FALL3D-6.2 ASH DISPERSION MODEL
25may2011 at 00:00 FLFL400 (mg/m³)

