

# **Inverse modelling of the Chernobyl source term using atmospheric concentration and deposition measurements**

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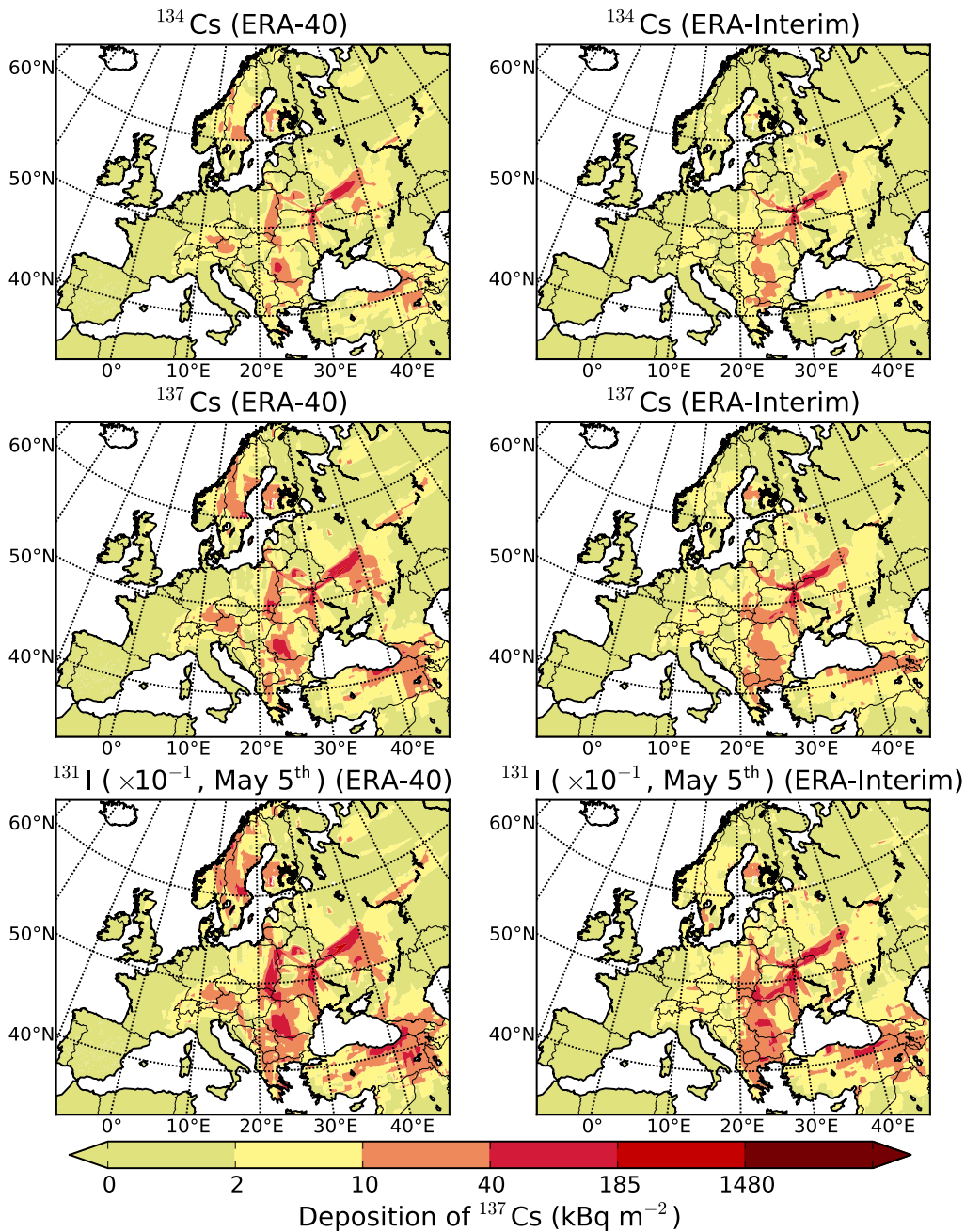
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1 SUPPLEMENTARY FIGURES AND LEGENDS

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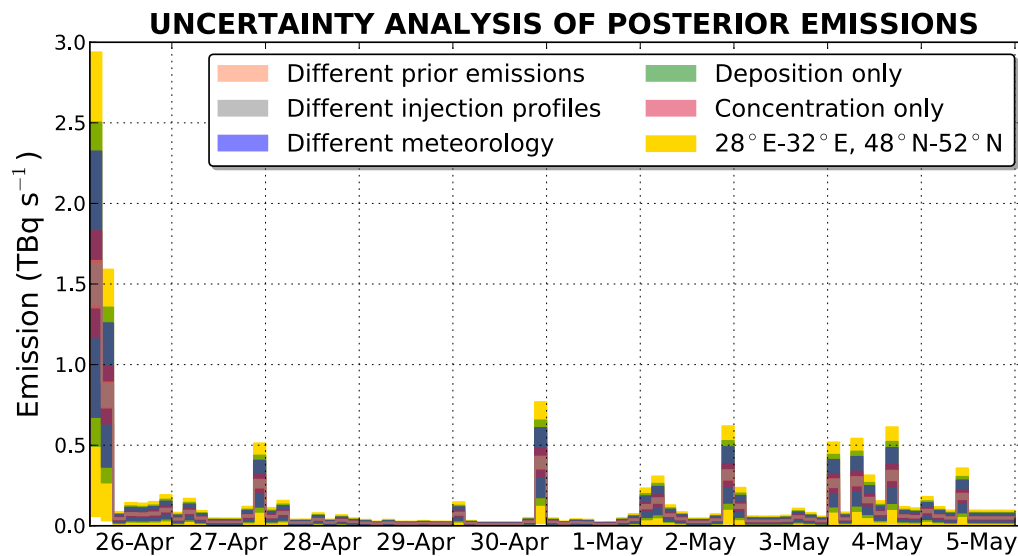
DEPOSITION OF CHERNOBYL RADIONUCLIDES  
USING PRIOR EMISSIONS



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4 **Figure S 1.** Deposition of  $^{134}\text{Cs}$ ,  $^{137}\text{Cs}$  and  $^{131}\text{I}$  based on the prior emissions used in the  
5 present inversion using ERA-40 and ERA-Interim meteorological datasets (Dee et al., 2011;  
6 Uppala et al., 2005).

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**Figure S 2.** Sensitivity of the inversion of  $^{137}\text{Cs}$  to modification of different parameters. Sensitivity tests accounted for (a) six different prior source terms, (b) three different injection profiles in the prior emissions, (c) two different meteorological datasets (ECMWF ERA-40 and ERA-Interim), (d) only deposition observations or (e) only activity concentrations and (f) only observations (both concentrations and deposition densities) from areas close to the NPP (28°E–32°E, 48°N–52°N). Uncertainties for each case are plotted as step function showing the range of uncertainty for every time step (TBq s<sup>-1</sup>).