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Pollen in COSMO-ART: current developments



Swiss COSMO user workshop
17.1.2012



Overview

- Review of the 2011 operational birch pollen season
- Key elements of the pollen module:
 - => Plant distribution
 - => Description of the pollen season
 - => Emission formula (meteorological influence)
- Verification of operational birch and pre-operational grass pollen season
- Plans for 2012



The birch pollen season 2011

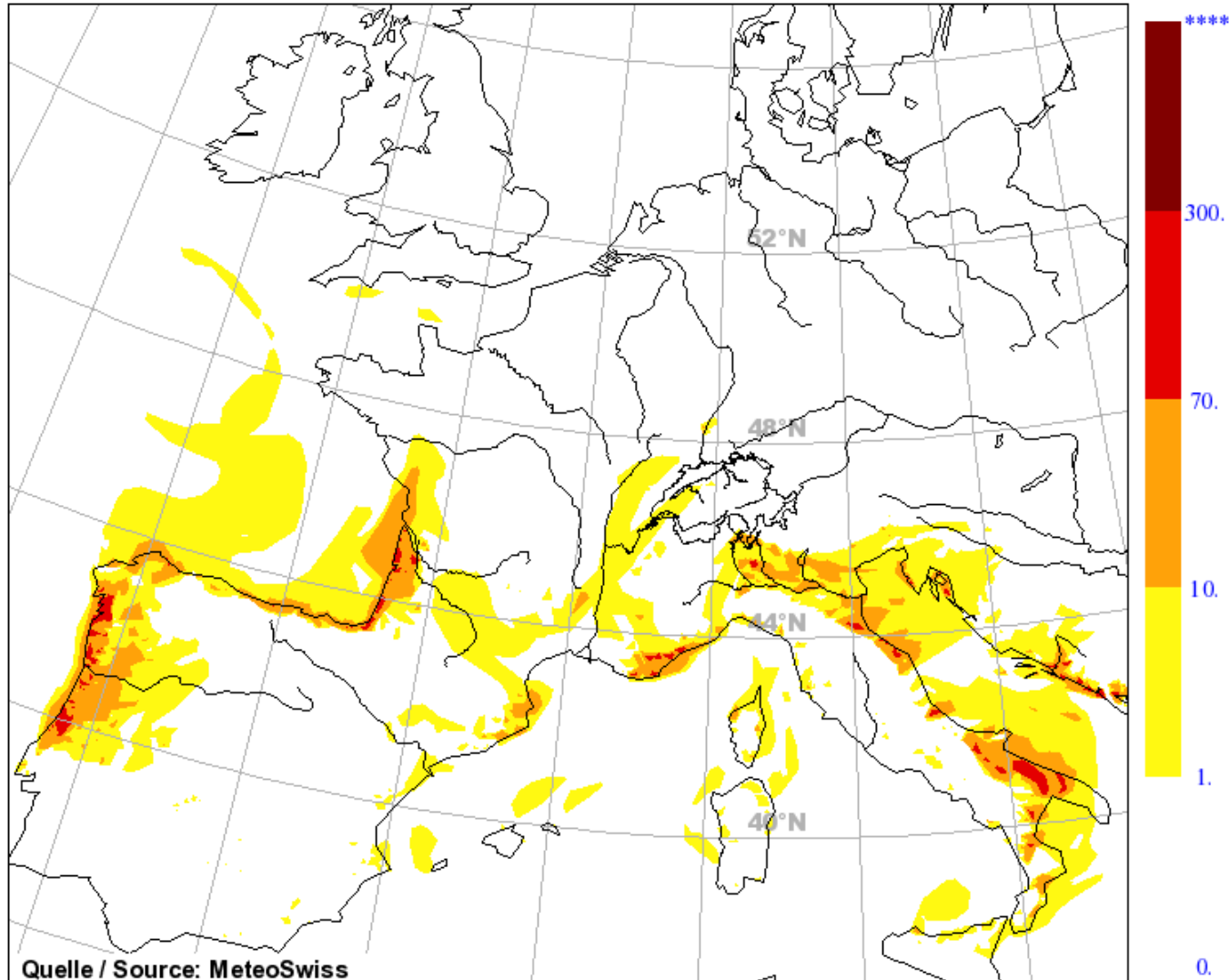
COSMO-7 Analysis for: **Sat 26 Mar 2011 00 UTC**

Version: **opr 7km (897)**

Birch Pollen Concentration

Maximum: 247m-3

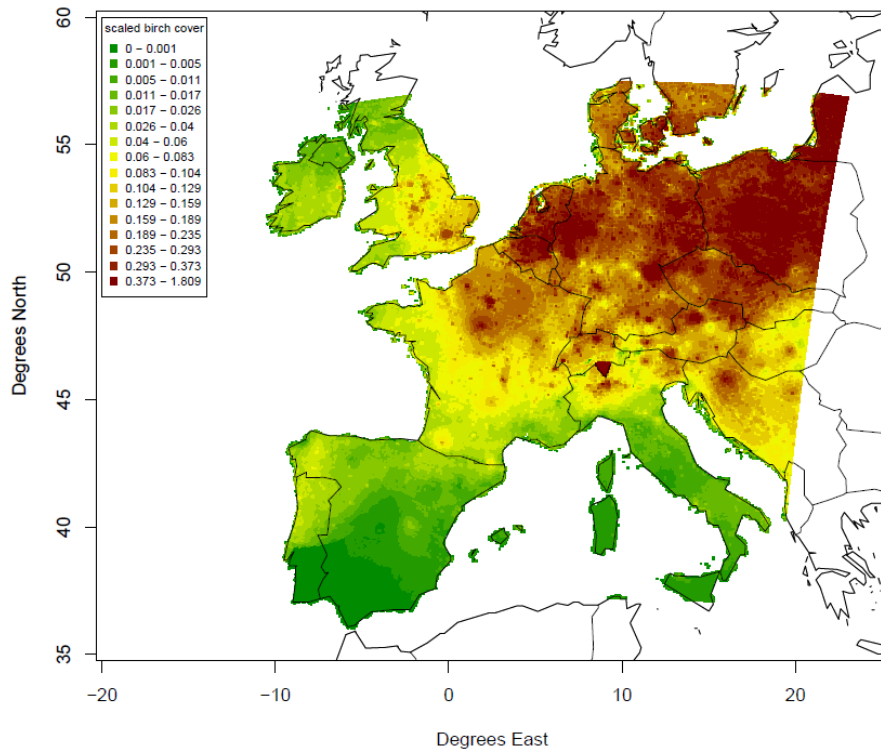
Run: 26.03.2011 00UTC+0h



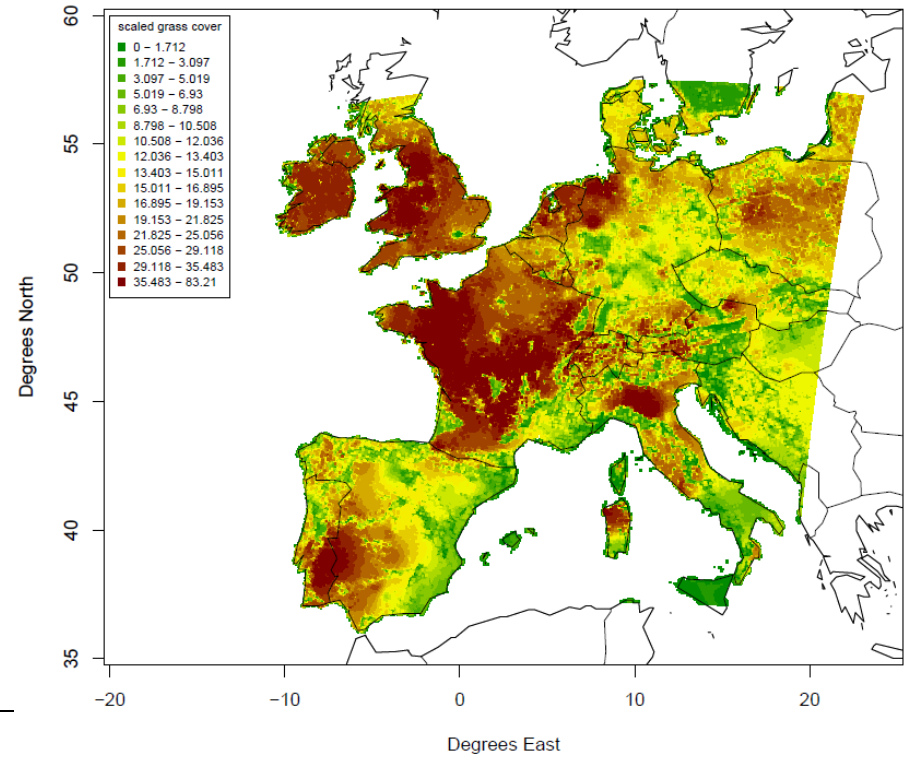


Plant distribution maps

Birch

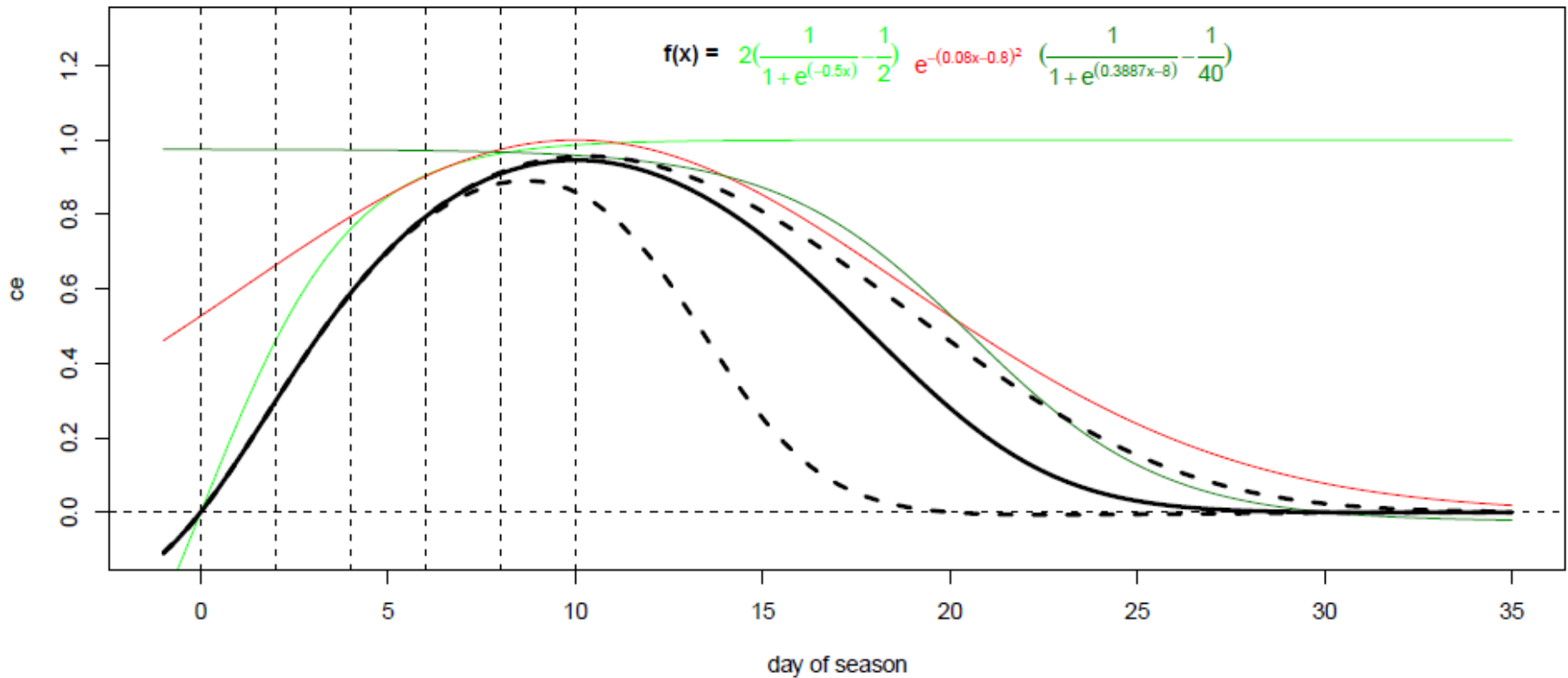


Grass





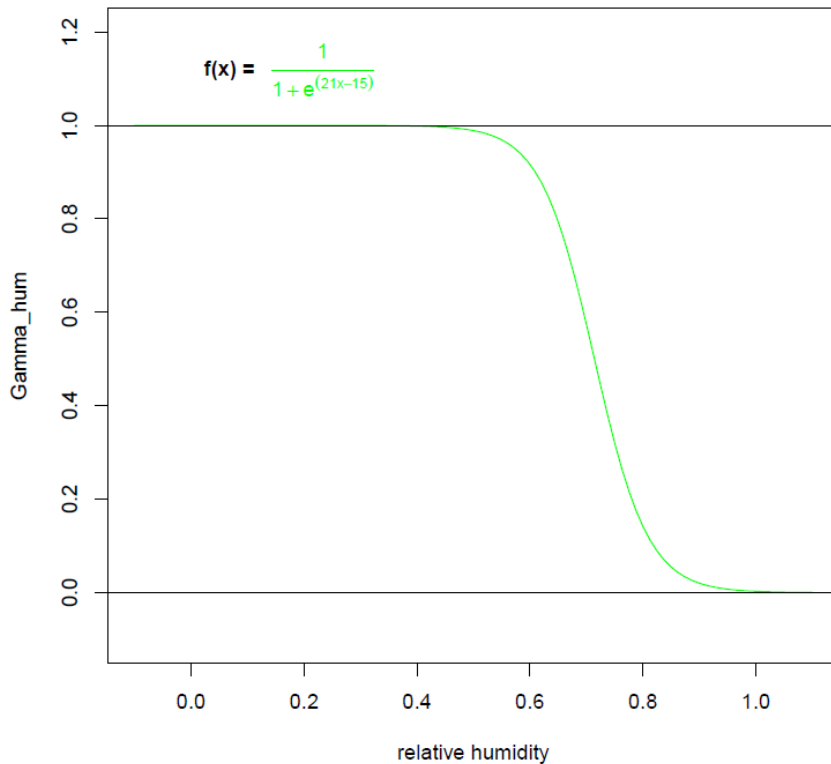
Description of the birch pollen season: used as factor for new emission formula



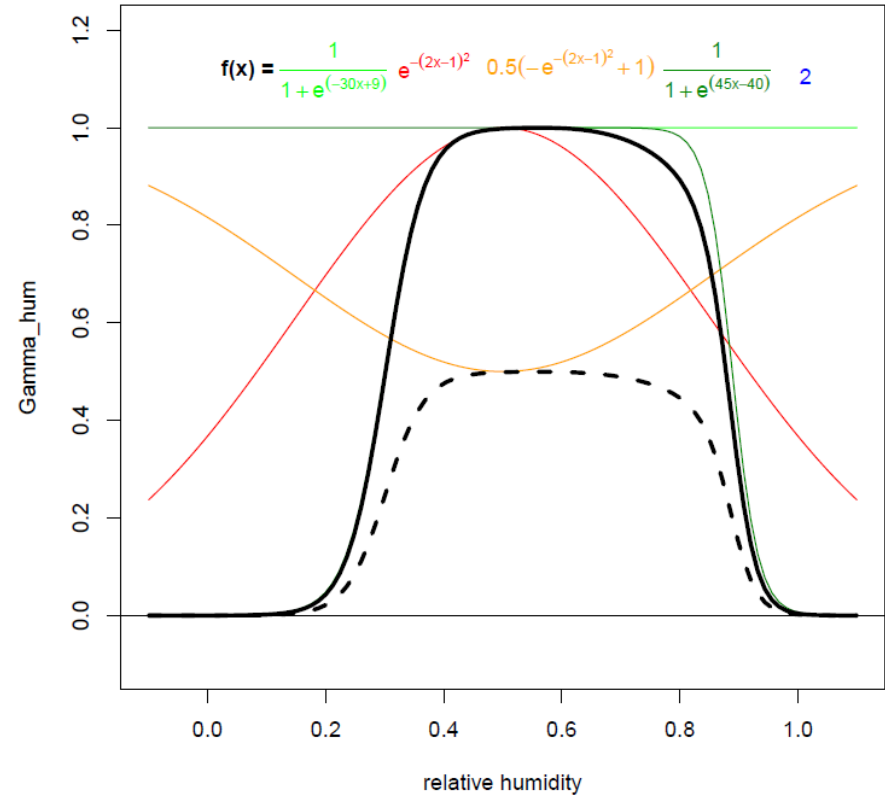


The meteorological influence: humidity

BETU



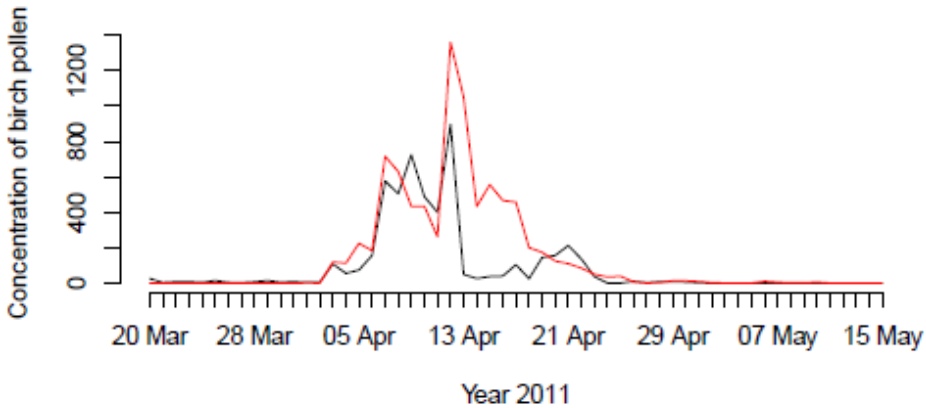
POAC



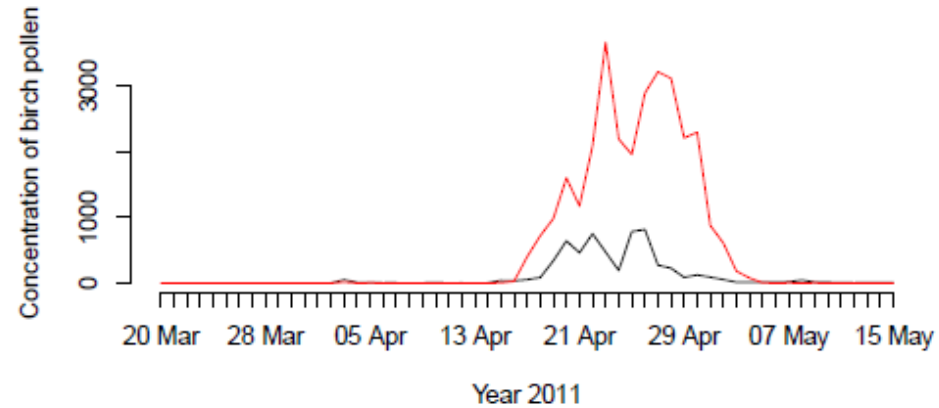


Birch: Comparison with measurements

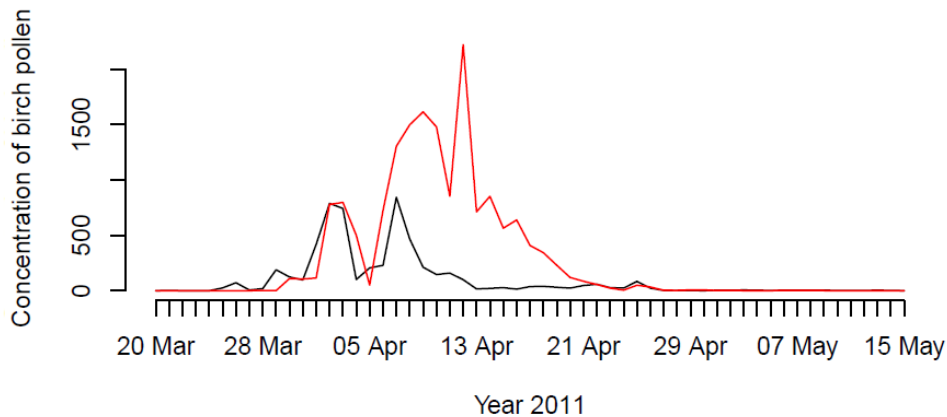
DEZUSM; black: measured, red: modelled



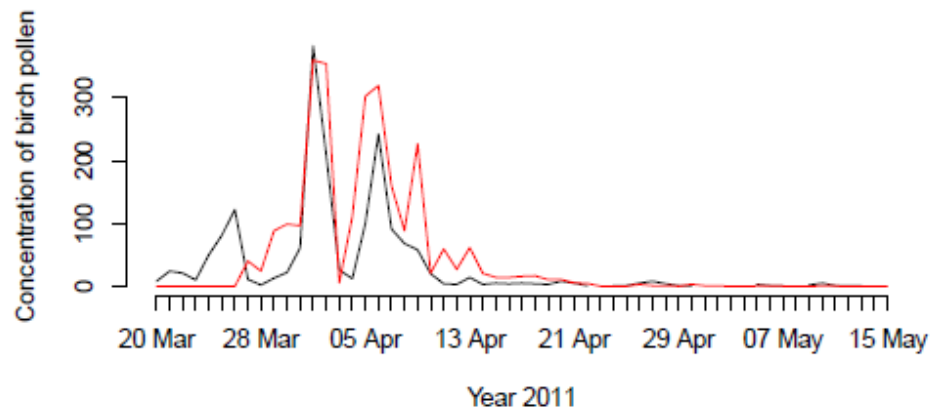
DKCOPE; black: measured, red: modelled



CHBASE; black: measured, red: modelled



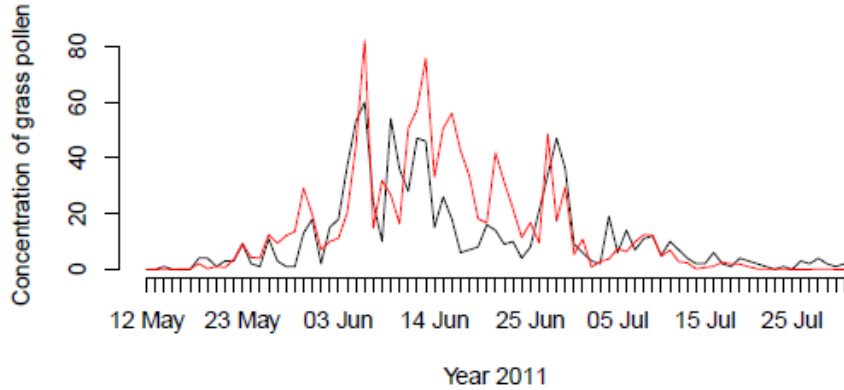
FRPAU1; black: measured, red: modelled



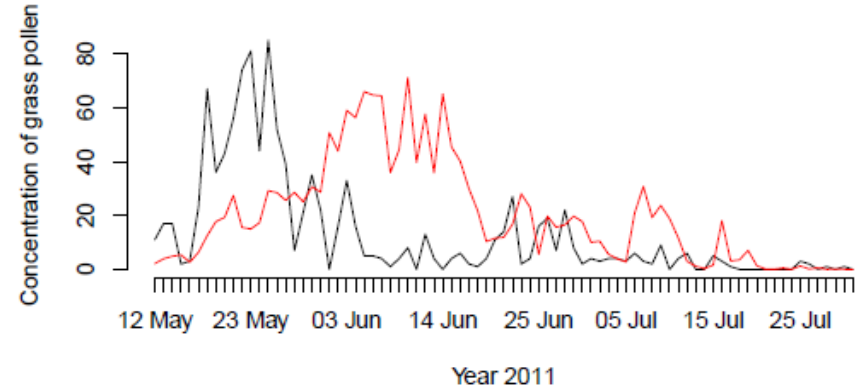


Grass: Comparison with measurements

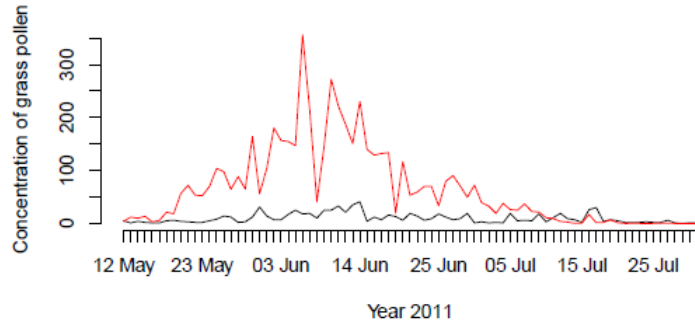
DEFLEN; black: measured, red: modelled



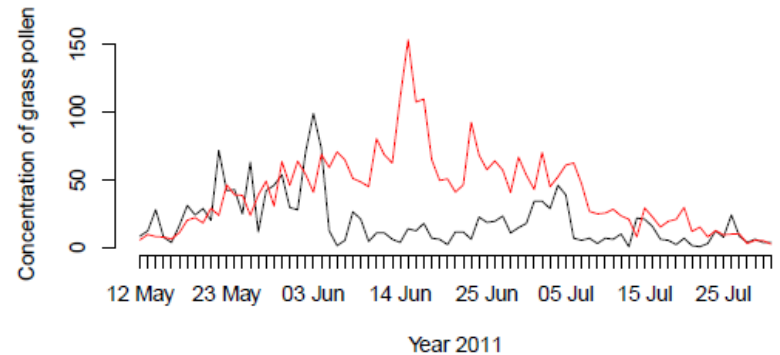
DEFREI; black: measured, red: modelled



DEGREI; black: measured, red: modelled

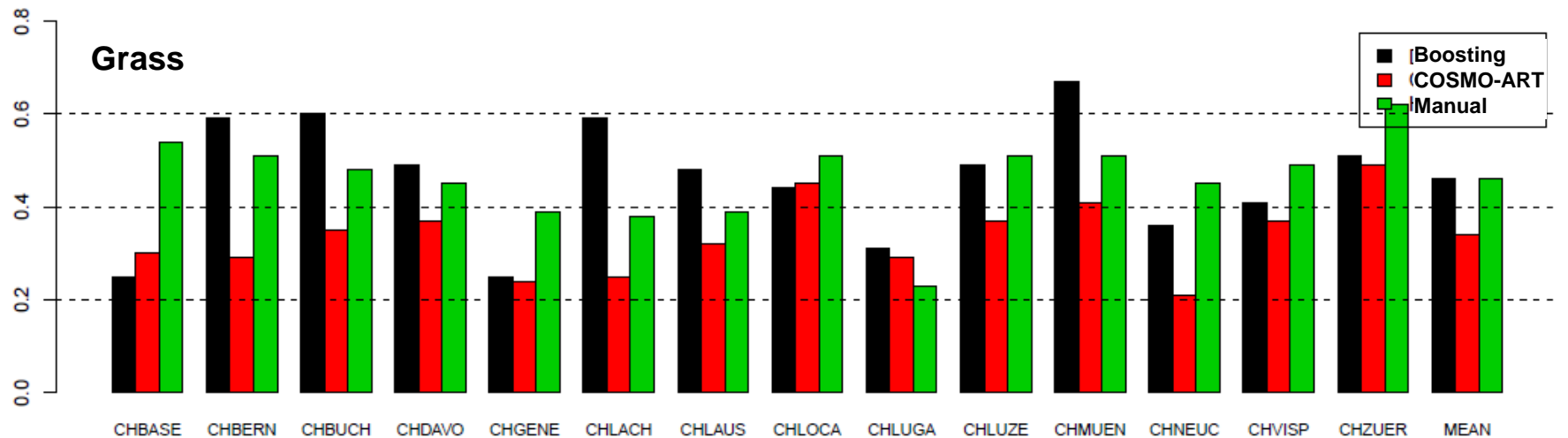
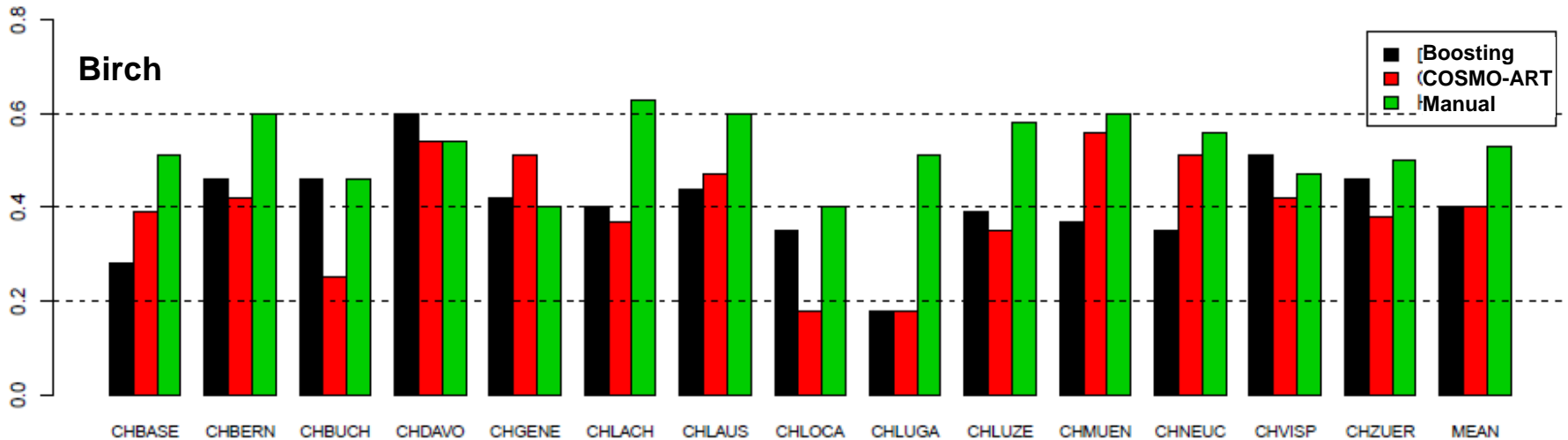


FRPARI; black: measured, red: modelled





COSMO-ART performance 2011 based on 14 Swiss pollen monitoring stations compared with boosting and manual forecast: Fraction of correct forecasts of 5 pollen classes





Plans for 2012

- Birch and grass pollen operational (March-July)
 - => New Pollen emission formula also for birch
 - => Updated plant distribution maps
 - => Improved description of the pollen season and met. Influence
- Tests with COSMO2

The End...