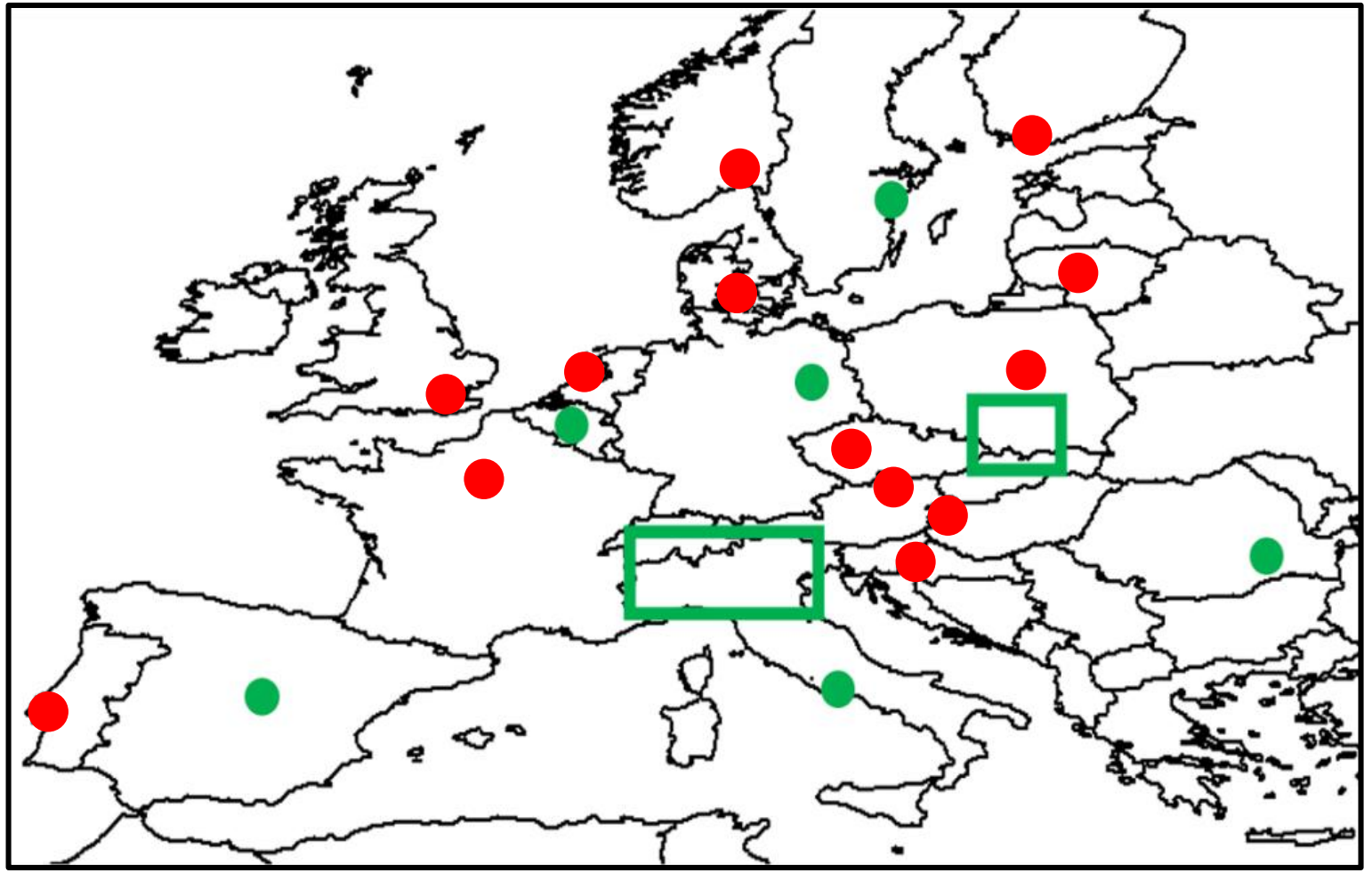


LongTerm: BRU, BER, MAD, STO, ROM, BUC, + POV, MAL

ShortTerm: AMS, ATH, BRA, BUD, COP, HEL, LIS, LON, OSL, PAR, POV, PRA, VIE, VIL, WAR, ZAG

SPECIES: O3, PM10, PM2.5, NO2, NO, NOx, VOC, NH3, SO2

EMISSION REDUCTIONS 25%, 50%:

PPM, NOx, VOC, NH3, SOx (individually)

ALL: NOx + VOC (O3)

ALL: PPM+NOx+VOC+NH3+SOx (PM10, PM2.5)

DATABASE(C):

DBMC_*Mode*

DBMC_EMEP

Resol = HL, DL

DATABASE(E):

DBME_*Mode*

DBME_MINN

Resol = HL, DL

```
netcdf file:/E:/DBM_DATABASE_CT9/DBMC_EMEPE_BRU_EPIS025_PM10_50%25PPM_DL.nc {

dimensions:
   nlat = 6;
   nlon = 6;
   ntime = UNLIMITED;   // (2 currently)

variables:
   float PM10(ntime=2, nlat=6, nlon=6);
   double lat(nlat=6);
   double lon(nlon=6);
```

Postprocessing: O3HR8 (HL), O3HR8MAX (DL)

DBMC: 18000 files (some dbl/trp counting Resol)

DBME: 250 Files

Contents overview available

Access to DataBase: contact KC or BB

In September a paper was presented at the Harmo21 Conference in Aveiro (P) (A. de Meij, et al.)

Sensitivity of air quality indicators to different emission inventories in Europe

- EMEP model and 4 emission inventories:
- EDGAR, CAMS_v2, EmepGNFR, CAMS_v4_condensibles
- Indicators: Absolute Potential, Relative Potential, Absolute Potency

Preliminary Conclusions:

- Indicators are similar amongst the inventories for PM10 and O3 concentrations.
- PM10#PPM: linear, ie ΔPM10 for 50%PPM = 2 * ΔPM10 for 25%PPM
- PM10#NOx: linear (for lower 95p values); non-linear for the higher 95p values.
- O3#50%NOx: O3 increase (except POV 95p); increase 'low95p' > increase 'high95p'.
- O3#50%VOC: O3 decrease (similar for lower and higher), except POV where lower values decrease faster than higher values.

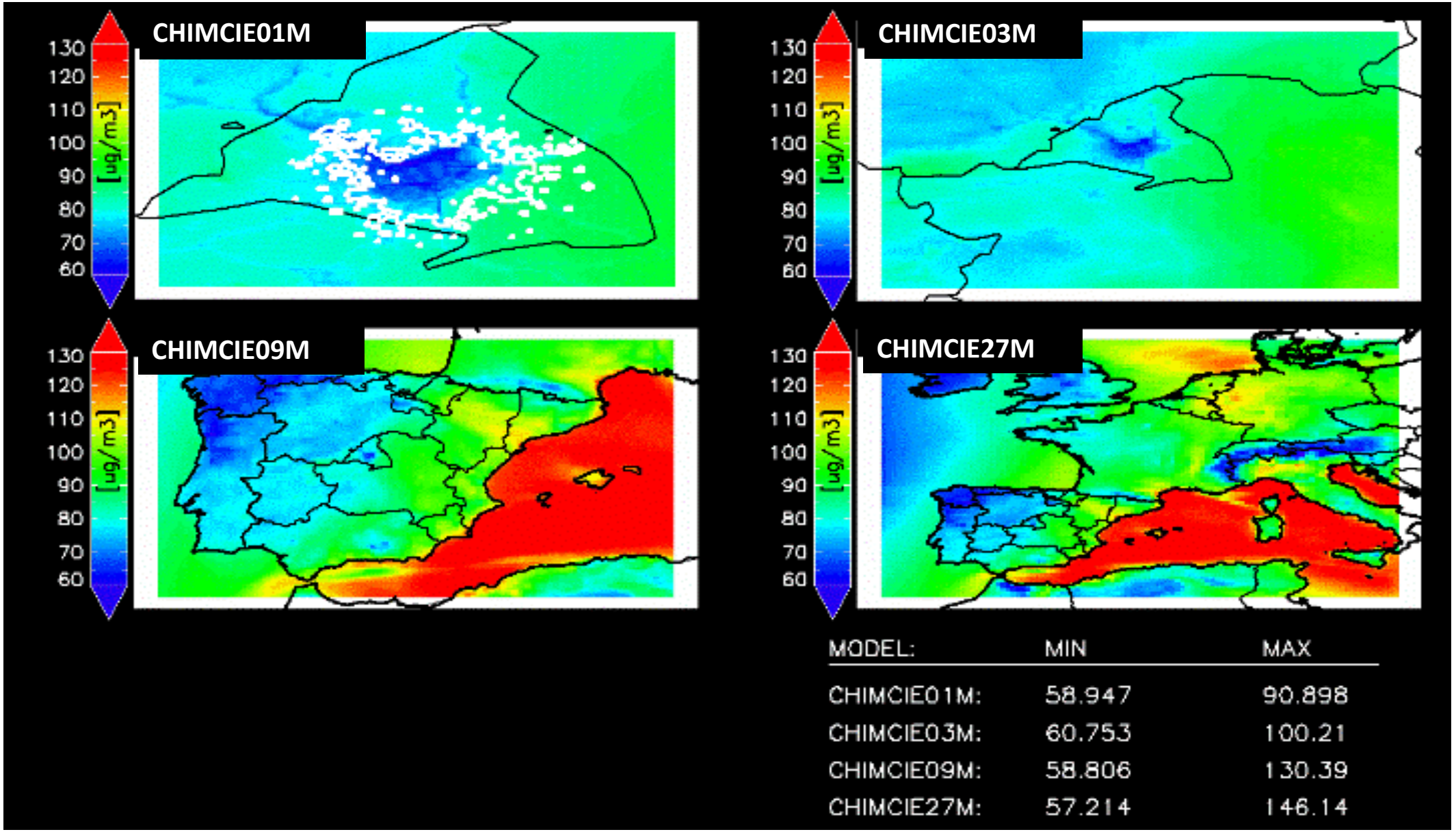
Following slides for Discussion

Resolution & Chemical Scheme

CHIMCIE MAD EPIS043 5Days

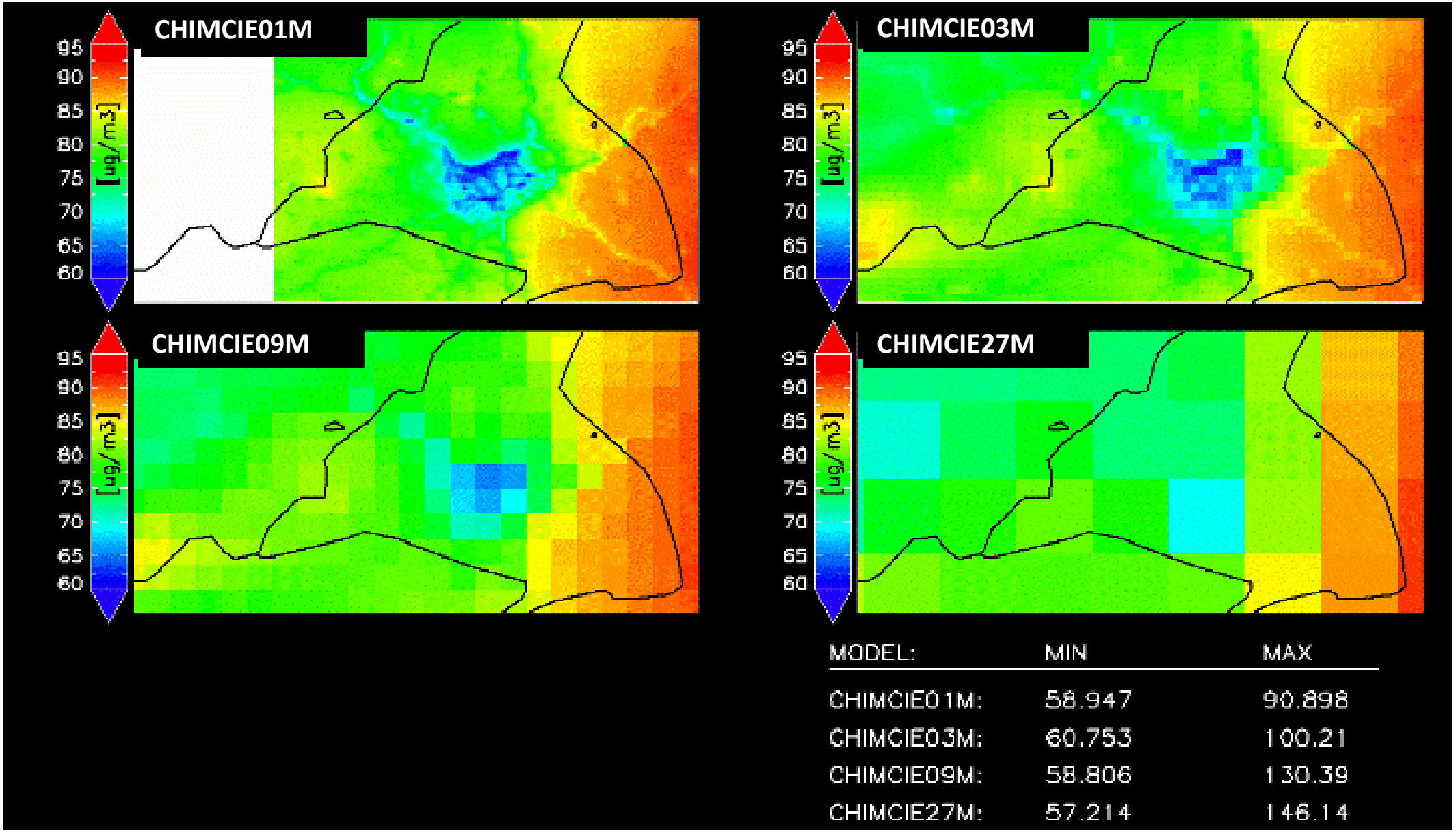
O3 [µg/m3]

Original Melchior Resol= 1,3,9,27 km



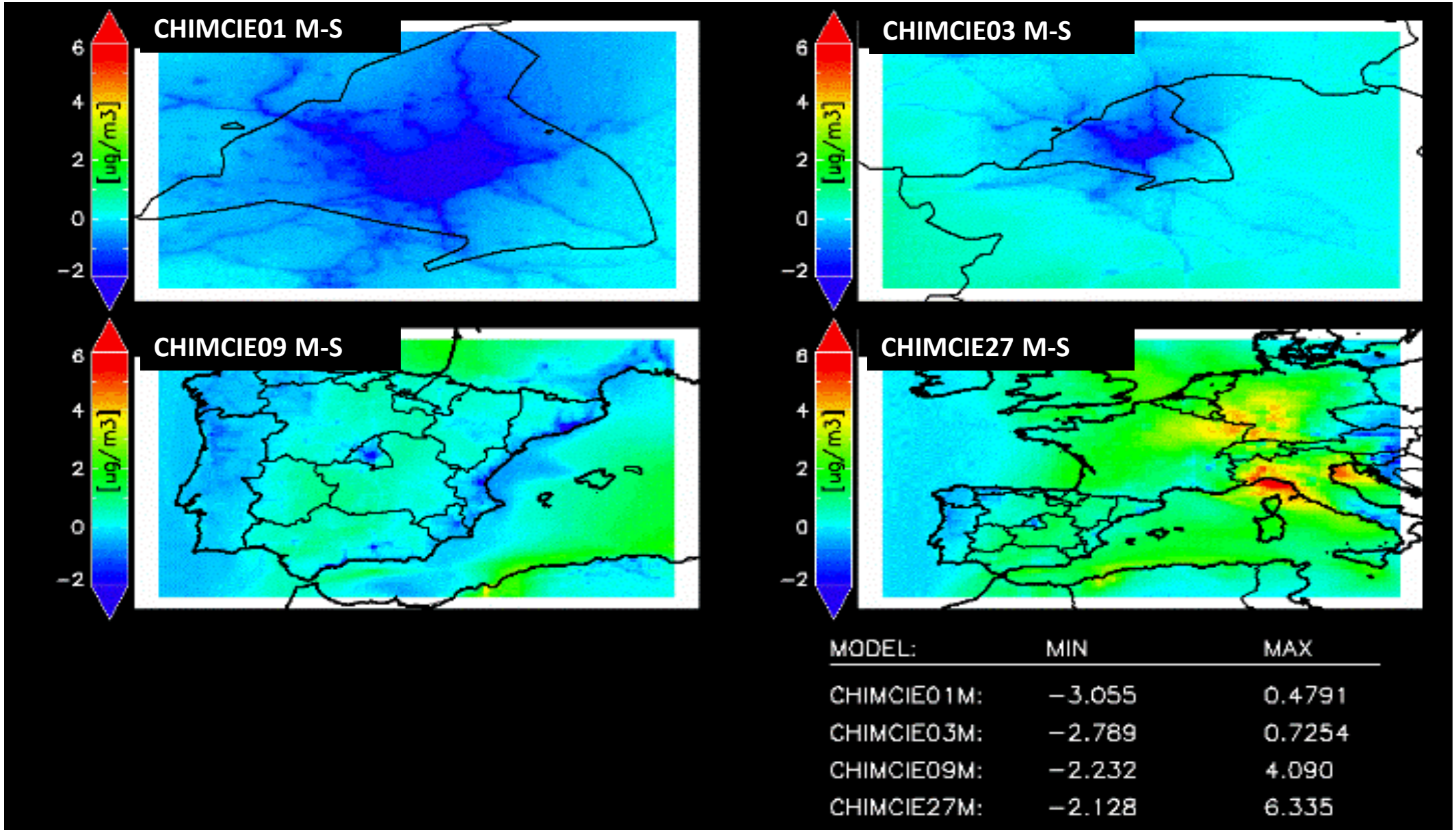
MODEL:	MIN	MAX
CHIMCIE01M:	58.947	90.898
CHIMCIE03M:	60.753	100.21
CHIMCIE09M:	58.806	130.39
CHIMCIE27M:	57.214	146.14

Zoom to MAD Melchior Resol= 1,3,9,27 km



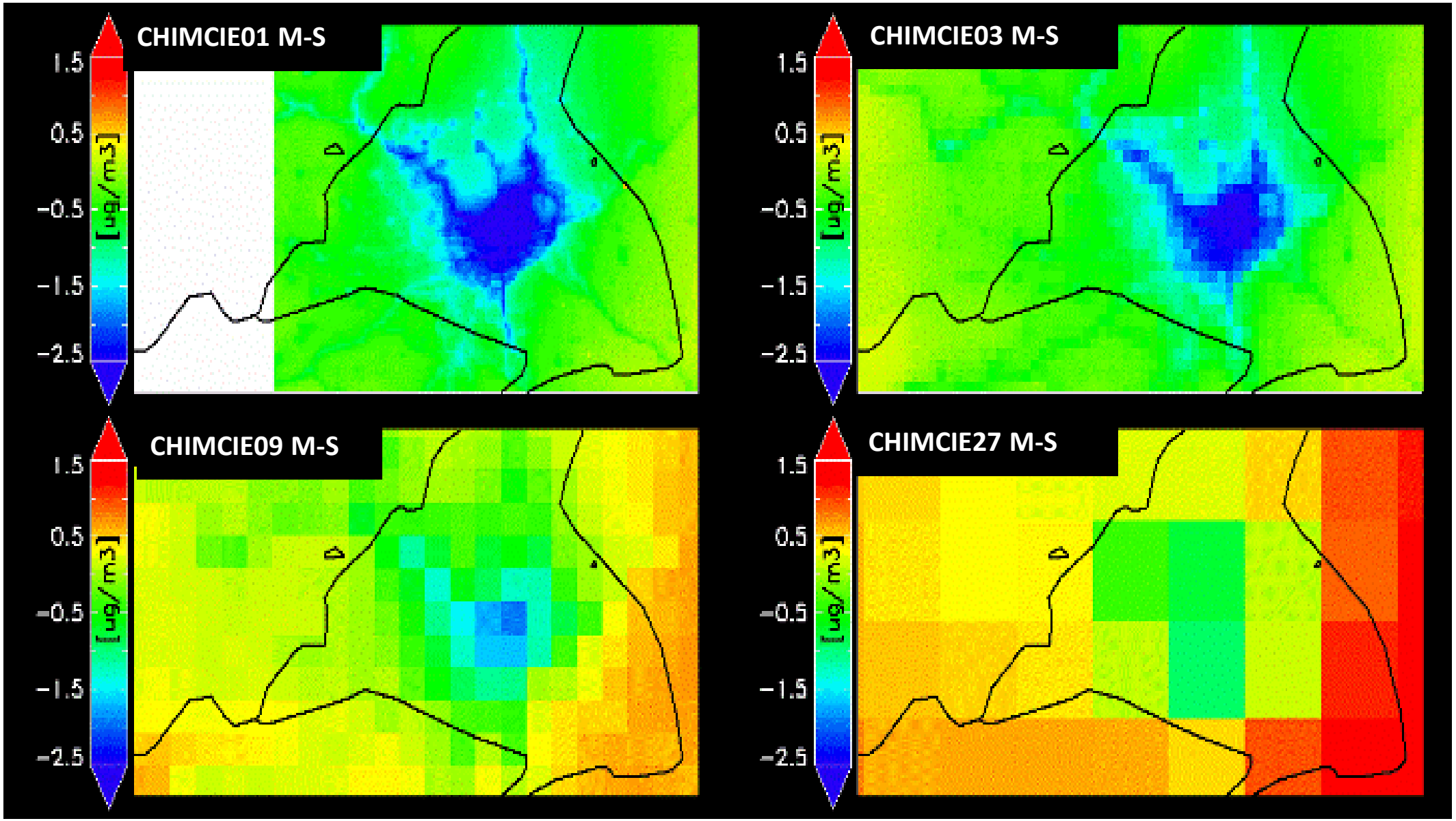
MODEL:	MIN	MAX
CHIMCIE01M:	58.947	90.898
CHIMCIE03M:	60.753	100.21
CHIMCIE09M:	58.806	130.39
CHIMCIE27M:	57.214	146.14

Original Melchior-Saprc Resol= 1,3,9,27 km



MODEL:	MIN	MAX
CHIMCIE01M:	−3.055	0.4791
CHIMCIE03M:	−2.789	0.7254
CHIMCIE09M:	−2.232	4.090
CHIMCIE27M:	−2.128	6.335

Zoom to MAD Melchior-Saprc Resol= 1,3,9,27 km

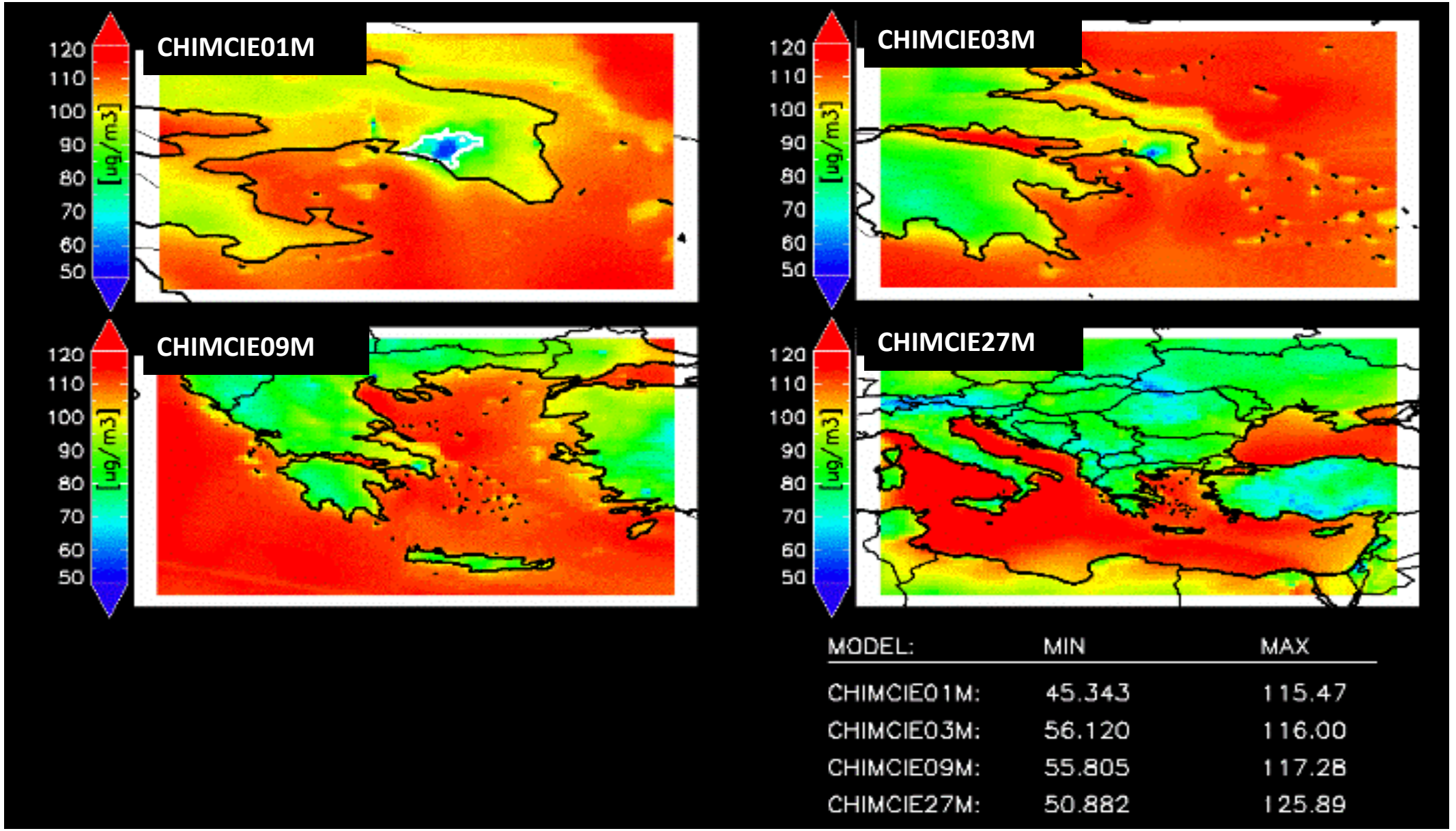


Resolution & Chemical Scheme

CHIMCIE ATH EPIS016 9Days

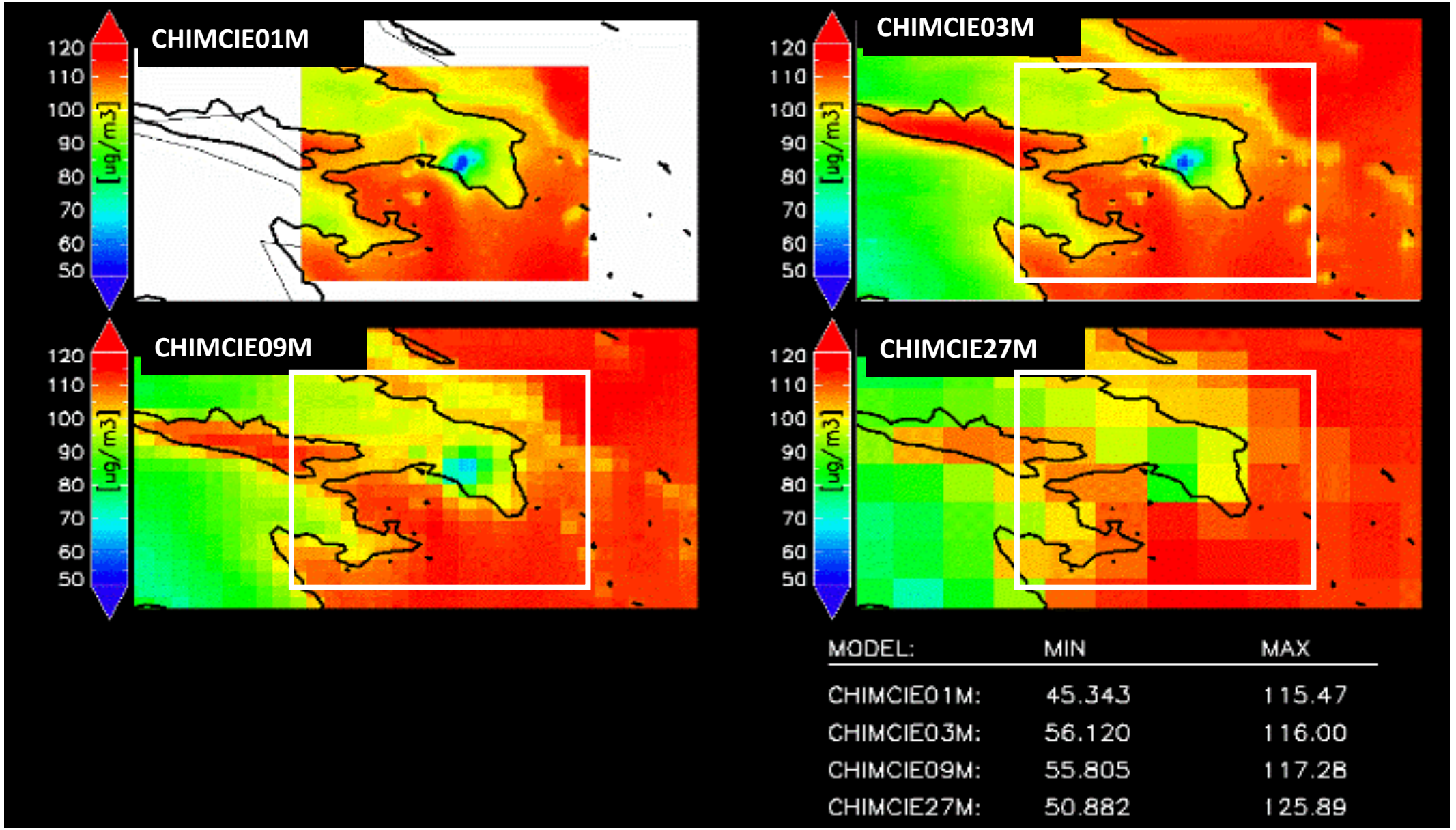
O3 [µg/m3]

Original Melchior Resol= 1,3,9,27 km



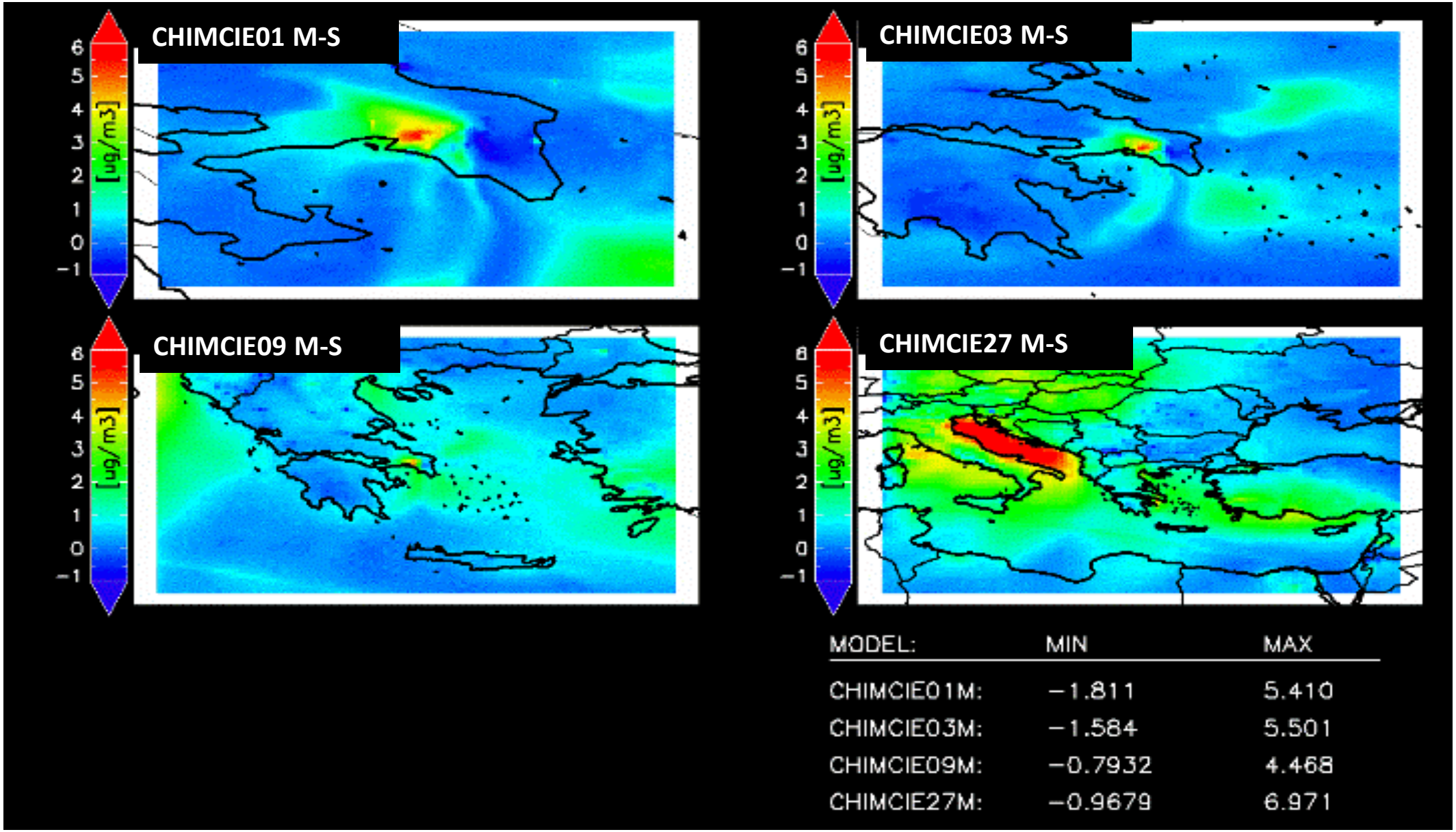
MODEL:	MIN	MAX
CHIMCIE01M:	45.343	115.47
CHIMCIE03M:	56.120	116.00
CHIMCIE09M:	55.805	117.28
CHIMCIE27M:	50.882	125.89

Zoom to ATH Melchior Resol= 1,3,9,27 km



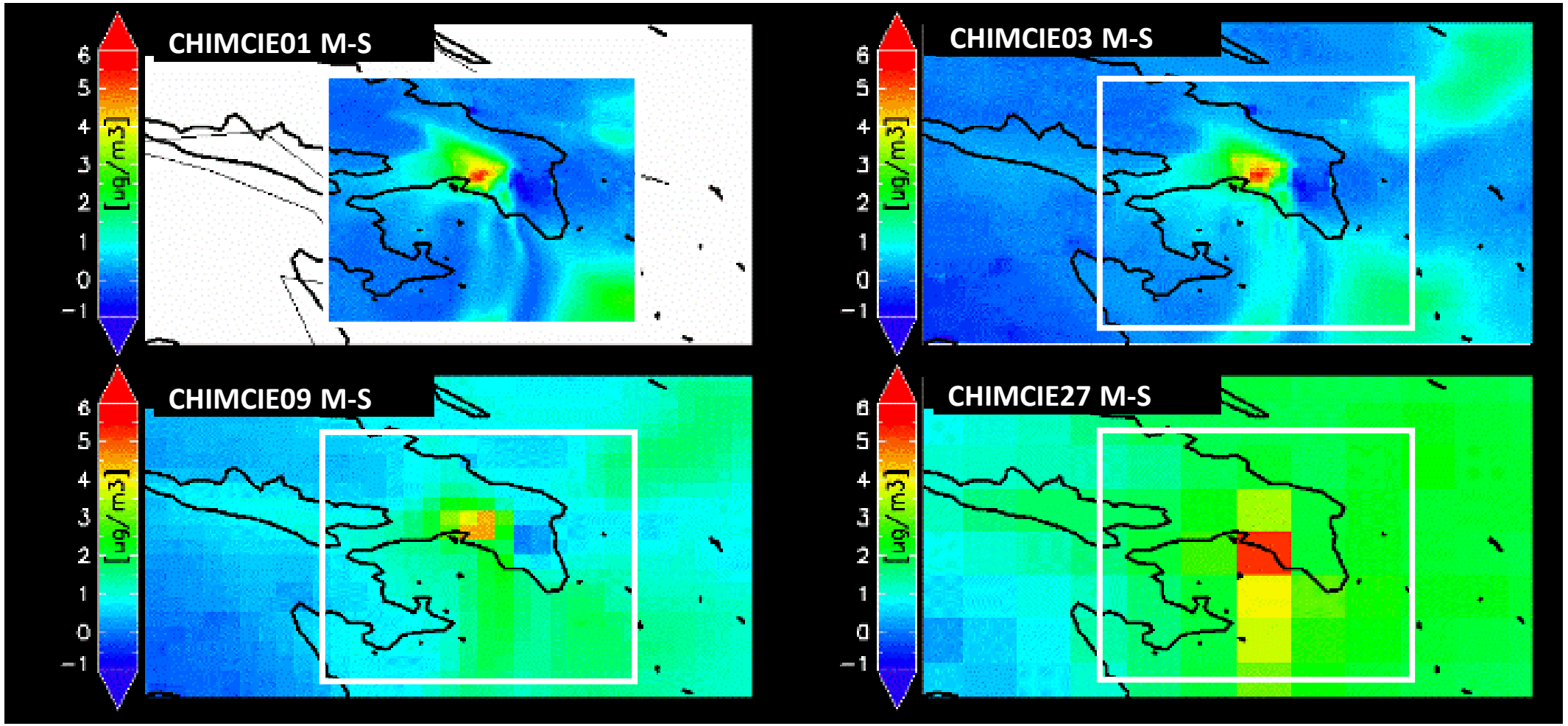
MODEL:	MIN	MAX
CHIMCIE01M:	45.343	115.47
CHIMCIE03M:	56.120	116.00
CHIMCIE09M:	55.805	117.28
CHIMCIE27M:	50.882	125.89

Original Melchior-Saprc Resol= 1,3,9,27 km



MODEL:	MIN	MAX
CHIMCIE01M:	−1.811	5.410
CHIMCIE03M:	−1.584	5.501
CHIMCIE09M:	−0.7932	4.468
CHIMCIE27M:	−0.9679	6.971

Zoom to ATH Melchior-Saprc Resol= 1,3,9,27 km



Exceedances PO-Valley

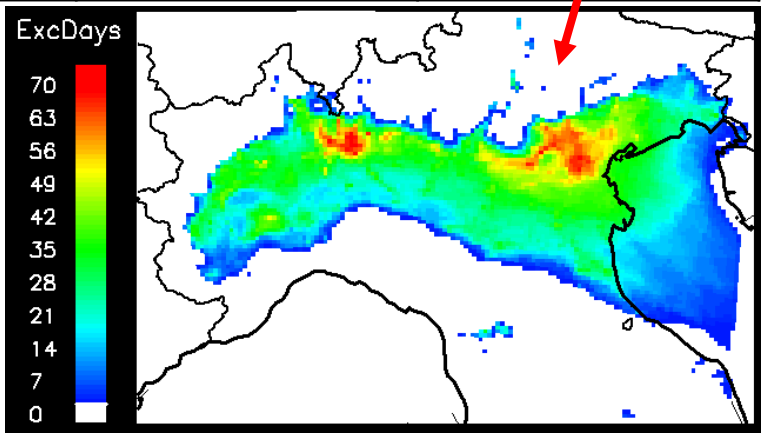
PM10 Po-Valley MINNI-ENEA 140x100 cells 4x4 km² 365days

Emission reductions ALL=[NH_3+NO_X+PPM+SO_X+VOC] 25% 50%

Daily		BaseCase	25% Reduction	50% reduction
EU	LV= 50 µg/m3 Max= 35 days	21.5% [0-89]	6.4% [0-62]	6.1% [0-62]
WHO 2005	LV= 50 µg/m3 Max= 4 days	48.1% [0-89]	40.1% [0-62]	39.7% [0-62]
WHO 2021	LV= 45 µg/m3 Max= 4 days	52.5% [0-100]	44.4% [0-75]	44.1% [0-75]

%'s of Italy/Land
no Med Sea
no Adr Sea

Annual		BaseCase	25% Reduction	50% reduction
EU	LV= 40 µg/m3	0%	0%	0%
WHO 2005	LV= 20 µg/m3	27.4%	11.4%	10.5%
WHO 2021	LV= 15 µg/m3	44.3%	35.9%	35.4%



O3hr8Max Po-Valley MINNI-ENEA 140x100 cells 4x4 km^2 365days

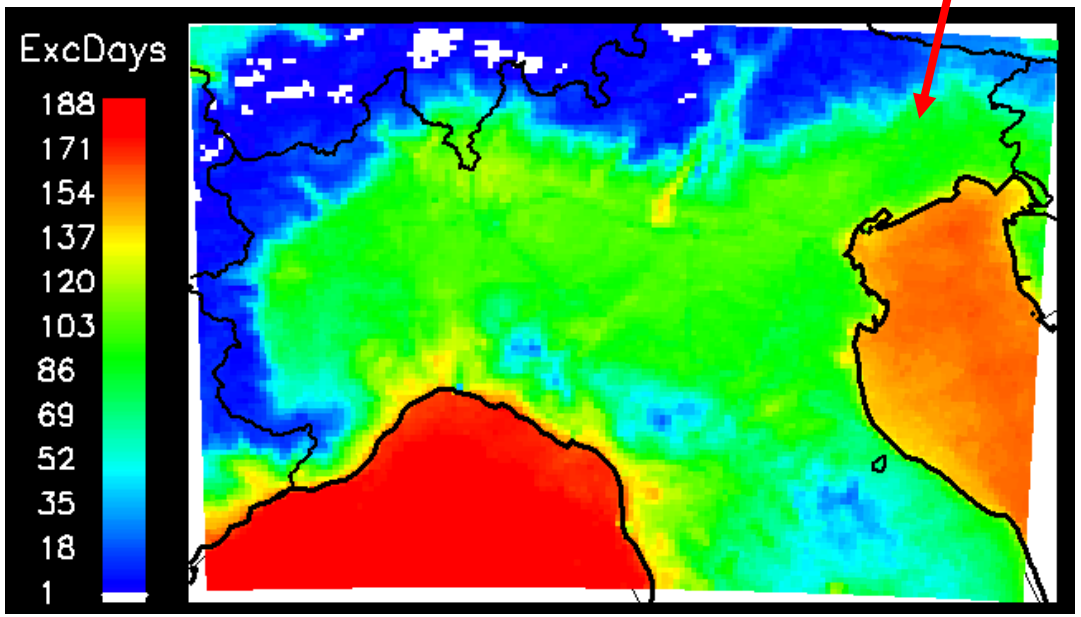
Emission reductions ALL=[NH_3+NO_X+PPM+SO_X+VOC] 25% 50%

Daily		BaseCase	25% Reduction	50% reduction
EU	LV= 120 µg/m3 Max= 25 days	49.8% [0-134]	38.8% [0-130]	37.3% [0-130]
WHO 2005 (and 2021)	LV= 100 µg/m3 Max= 4 days	99.7% [0-193]	99.7% [0-193]	99.7% [0-193]

%'s of Italy/Land
no Med Sea
no Adr Sea

Annual		BaseCase	25% Reduction	50% reduction
WHO 2021	LV= 60 µg/m3 *)	100%	100%	100%

*) Average of daily maximum 8-hour mean O3 concentration in the six consecutive months with the highest six-month running-average O3 concentration.



NO2 Po-Valley MINNI-ENEA 140x100 cells 4x4 km^2 365days

Emission reductions ALL=[NH_3+NO_X+PPM+SO_X+VOC] 25% 50%

Daily		BaseCase	25% Reduction	50% reduction
WHO 2021	LV= 25 µg/m3 Max= 4 days	53.0% [0-362]	44.6% [0-348]	44.0% [0-341]

Annual		BaseCase	25% Reduction	50% reduction
WHO 2021	LV= 10 µg/m3 Max= 4 days	39.9%	31.9%	31.4%

%'s of Italy/Land
no Med Sea
no Adr Sea