

AirBase - Exchange of information - maps methodology

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Location and concentration maps were created using AirBase version5 as data source:
<http://www.eea.europa.eu/data-and-maps/data/airbase-the-european-air-quality-database-3>

Two tables have been used: Airbase_v5_station, and Airbase_v5_statistic, both are available for download from the URL mentioned above.

- Location maps: location of stations for which 2009 air quality data for components O3, PM10, NO2, SO2, C6H6, PM2.5, Pb and CO have been reported.
 Distinction is shown if stations report a component for the first time or not.

SQL query used:

```
select Airbase_v5_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,station_legend from
Airbase_v5_station
inner join
(select station_european_code,component_code,component_caption,component_name,'Station reporting this
component for the first time in 2009' as station_legend,count(distinct statistics_year) as CountDistinctYear from
Airbase_v5_statistic
where component_code in
(/*SO2*/1,/*NO2*/8,/*PM10*/5,/*PM2.5*/6001,/*Pb*/12,'5012'/*CO*/10,/*C6H6*/20,/*O3*/7)
group by station_european_code,component_code,component_caption,component_name
having count(distinct statistics_year)=1 and max(statistics_year)=2009
union
select station_european_code,component_code,component_caption,component_name,'Station reporting this component
for 2009 but not for the first time',count(distinct statistics_year) from Airbase_v5_statistic
where component_code in (/SO2*/1,/*NO2*/8,/*PM10*/5,/*PM2.5*/6001,/*Pb*/12,
'5012'/*CO*/10,/*C6H6*/20,/*O3*/7)
group by station_european_code,component_code,component_caption,component_name
having count(distinct statistics_year)<>1 and max(statistics_year)=2009
) as TableA
on Airbase_v5_station.station_european_code=TableA.station_european_code
order by Airbase_v5_station.station_european_code,component_code,station_legend
```

- Concentration maps: observed concentration maps for which 2009 air quality data for components O3, PM10, NO2, SO2, C6H6, PM2.5, CO and Bap have been reported.
 Distinction is shown by specific relevant thresholds for each component.

SQL query used:

```
/*NO2*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=20' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='8' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=20
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'20 - <=40' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='8' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>20 and statistic_value<=40)
union
```

```

select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'40 - <=42' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='8' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>40 and statistic_value<=42)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>42' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='8' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>42
union
/*SO2*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=5' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='1' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=5
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'5 - <=10' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='1' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>5 and statistic_value<=10)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'10 - <=20' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='1' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>10 and statistic_value<=20)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>20' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='1' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>20
union

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/*PM10*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=20' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='5' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=20
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'20 - <=31' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='5' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>20 and statistic_value<=31)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'31 - <=40' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='5' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>31 and statistic_value<=40)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>40' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='5' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>40
union
/*PM2.5*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=10' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='6001' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=10
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'10 - <=20' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='6001' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>10 and statistic_value<=20)
union

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select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'20 - <=25' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='6001' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>20 and statistic_value<=25)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>25' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='day' and statistics_percentage_valid>=75 and component_code='6001' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>25
union
/*CO*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=0.5' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='10' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=0.5
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'0.5 - <=1' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='10' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>0.5 and statistic_value<=1)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'1 - <=2' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='10' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>1 and statistic_value<=2)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>2' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='10' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>2
union

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```

/*C6H6*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=2' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=50 and component_code='20' and statistics_year=2009 and
statistic_shortcode='mean' and statistic_value<=2
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'2 - <=5' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=50 and component_code='20' and statistics_year=2009 and
statistic_shortcode='mean' and (statistic_value>2 and statistic_value<=5)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'5 - <=6' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=50 and component_code='20' and statistics_year=2009 and
statistic_shortcode='mean' and (statistic_value>5 and statistic_value<=6)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>6' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=50 and component_code='20' and statistics_year=2009 and
statistic_shortcode='mean' and statistic_value>6
union
/*O3*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=60' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='7' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value<=60
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'60 - <=80' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='7' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>60 and statistic_value<=80)
union

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select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'80 - <=100' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='7' and
statistics_year=2009 and statistic_shortcode='mean' and (statistic_value>80 and statistic_value<=100)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>100' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_average_group='dymax' and statistics_percentage_valid>=75 and component_code='7' and
statistics_year=2009 and statistic_shortcode='mean' and statistic_value>100
union
/*Bap, list of component_code: 6015,5029,5129,1029*/
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'<=0.4' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=14 and component_code in ('6015','5029','5129','1029') and statistics_year=2009
and statistic_shortcode='mean' and statistic_value<=0.4
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'0.4 - <=0.6' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=14 and component_code in ('6015','5029','5129','1029') and statistics_year=2009
and statistic_shortcode='mean' and (statistic_value>0.4 and statistic_value<=0.6)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'0.6 - <=1.0' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=14 and component_code in ('6015','5029','5129','1029') and statistics_year=2009
and statistic_shortcode='mean' and (statistic_value>0.6 and statistic_value<=1)
union
select Airbase_v5_20110301_station.station_european_code,
component_code,component_caption,component_name,station_longitude_deg,station_latitude_deg,'>1.0' as
station_legend, statistics_average_group, statistics_year, statistic_shortcode,statistic_value, measurement_unit,
statistics_percentage_valid
from Airbase_v5_20110301_station
inner join dbo.Airbase_v5_20110301_statistic
on Airbase_v5_20110301_station.station_european_code=Airbase_v5_20110301_statistic.station_european_code
where statistics_percentage_valid>=14 and component_code in ('6015','5029','5129','1029') and statistics_year=2009
and statistic_shortcode='mean' and statistic_value>1
order by component_code, Airbase_v5_20110301_station.station_european_code

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