

Raw hourly in situ $PM_{2.5}$ concentration observations

Quality control

Gap filling

Data aggregation

Daily $PM_{2.5}$ data series

Monthly $PM_{2.5}$ data series

Quantile matching adjustment

Reference series composition

Adjusted daily $PM_{2.5}$ concentration datum

Break point detection

Post-processing

Change points

Homogenized daily in situ $PM_{2.5}$ concentration dataset