

# 京津冀地区重污染预警与相应机制研究

## STUDY ON SERIOUS POLLUTION ALARM AND RELEVANT MECHANISM IN BEIJING-TIANJIN-HEBEI REGION

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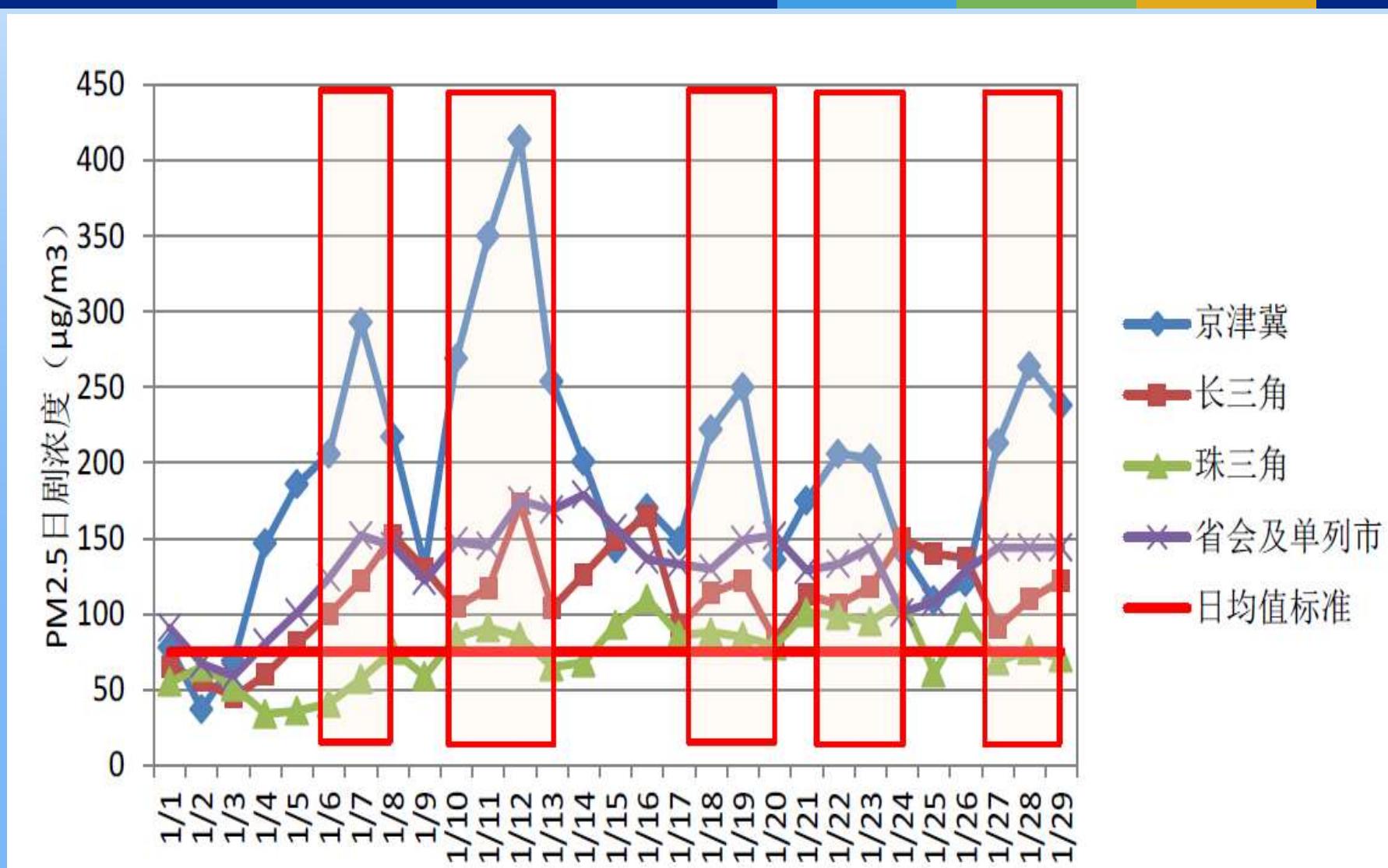
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# 2013年1月PM2.5日均浓度分布

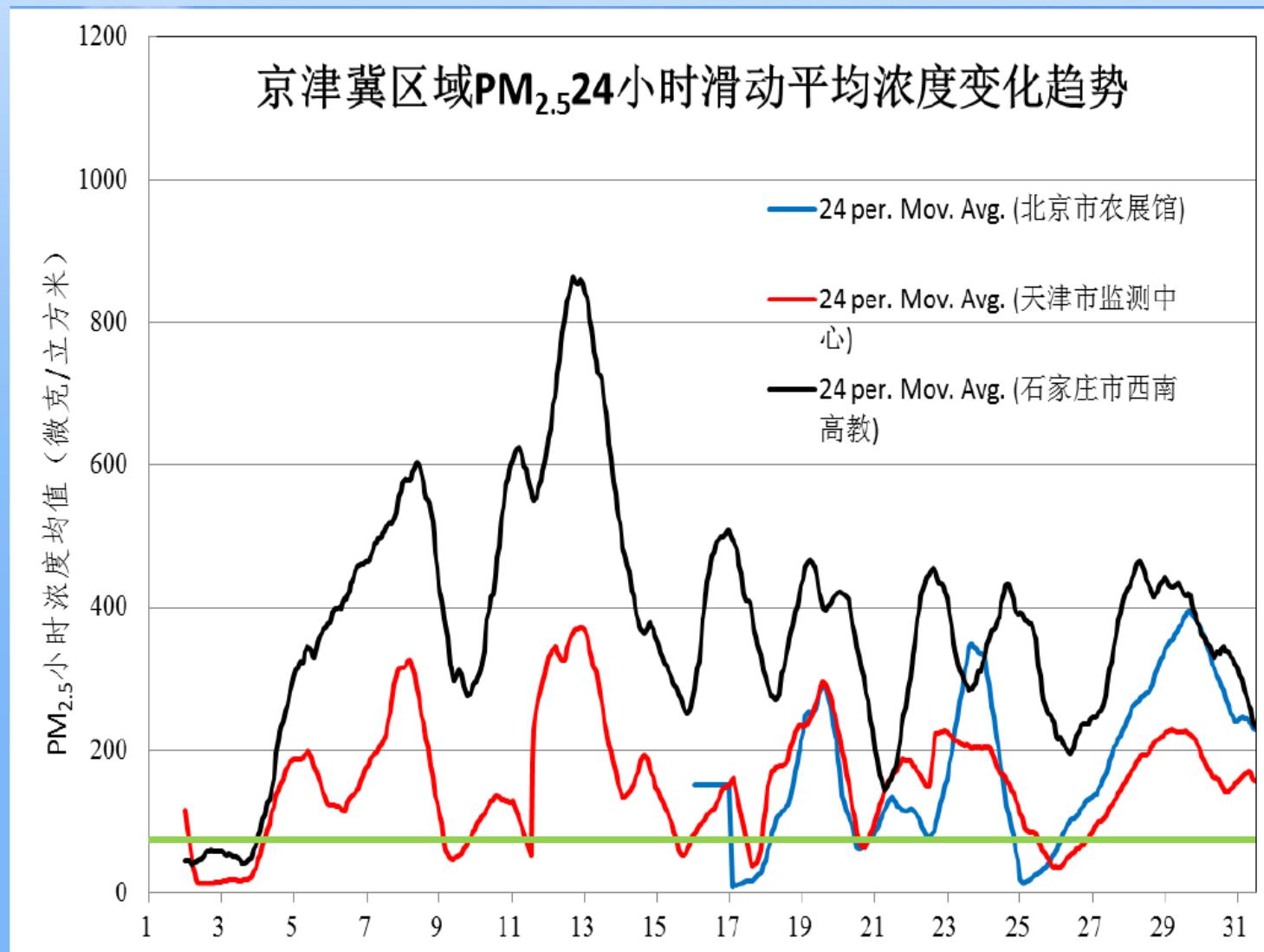
## Daily average density distribution of January 2013

(Blue: BTH, Red: the Yangtze River Delta, Green: the Pearl River Delta, Purple: provincial capital city)



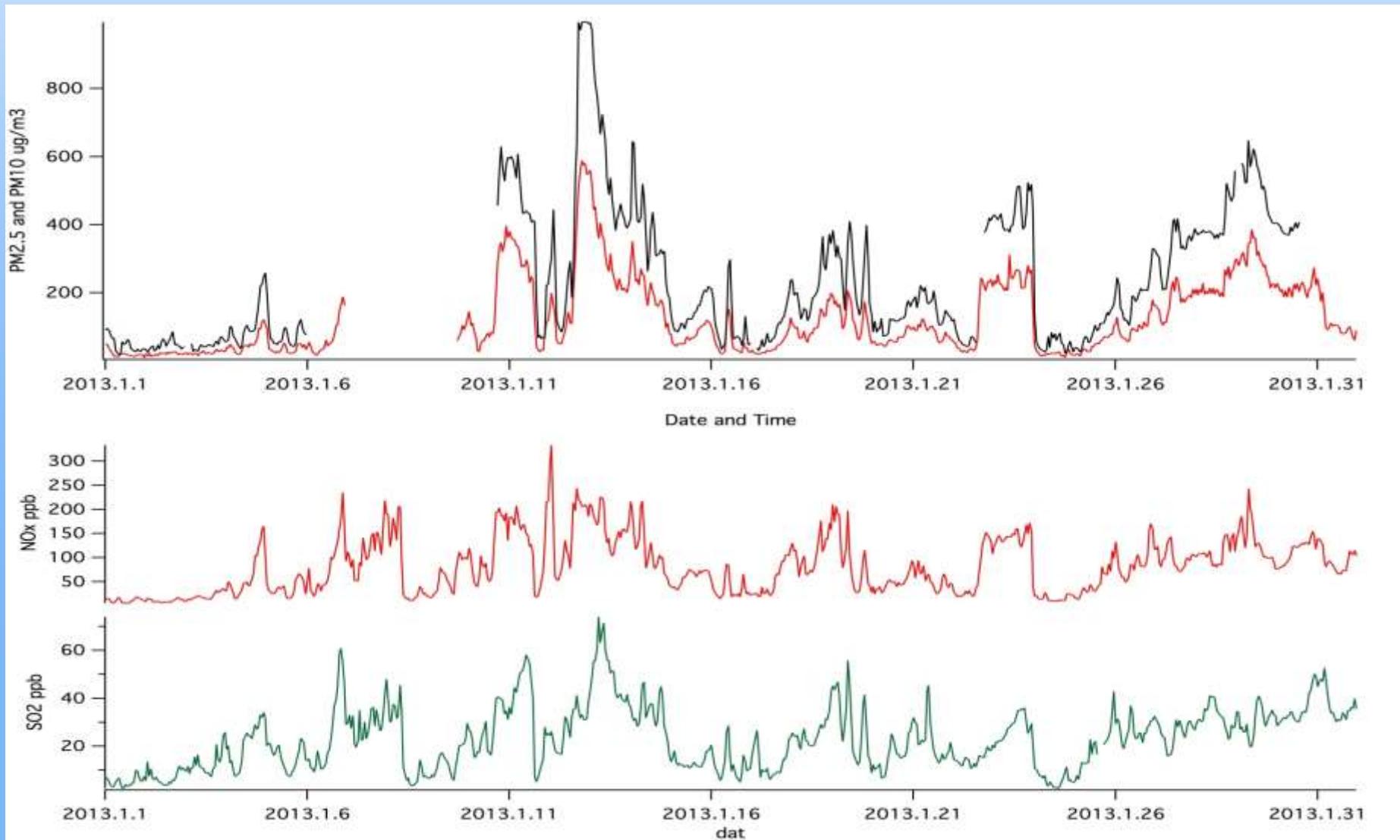
# 24 per. Mov. Avg. trend of PM<sub>2.5</sub> in BTH Region

(Blue: Agriculture Exhibition Center in Beijing; Red: Tianjin Monitoring Center; Black: Southwest Gaojiao Shijiazhuang)



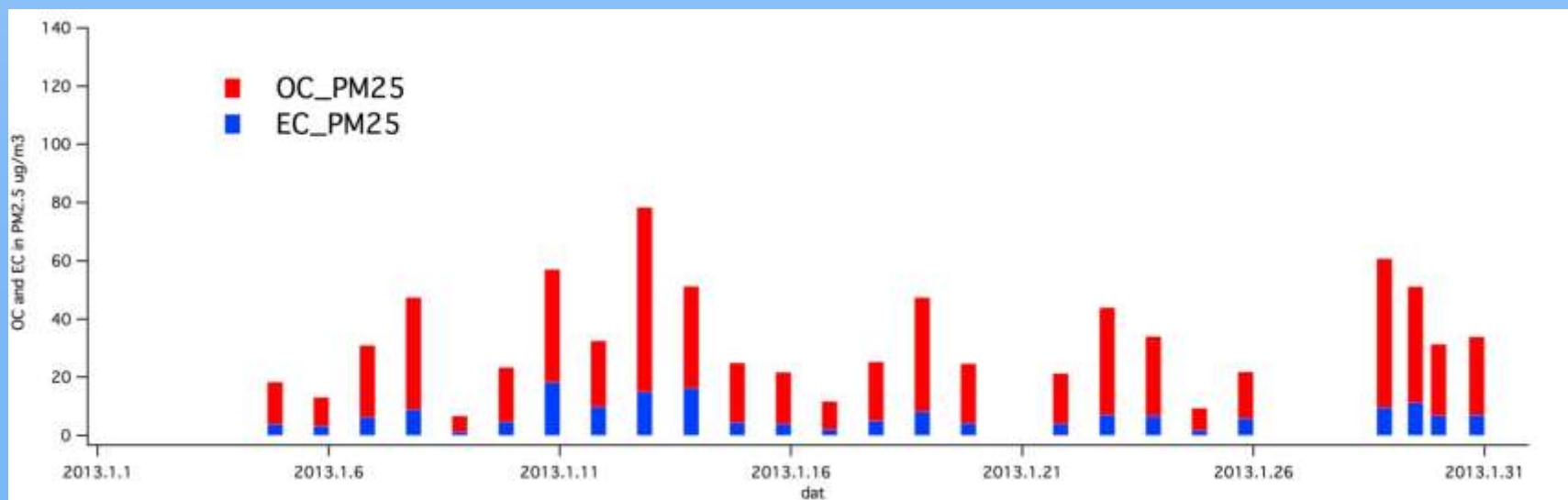
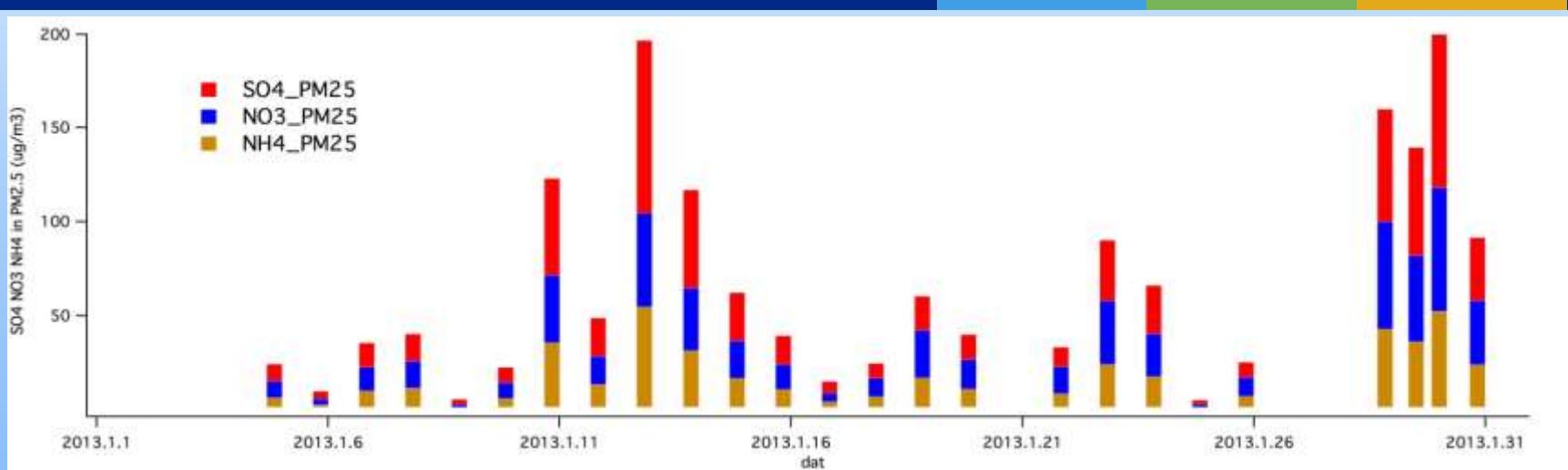
# 2013年1月连续重污染过程

## Continuous Pollution Process in Jan 2013

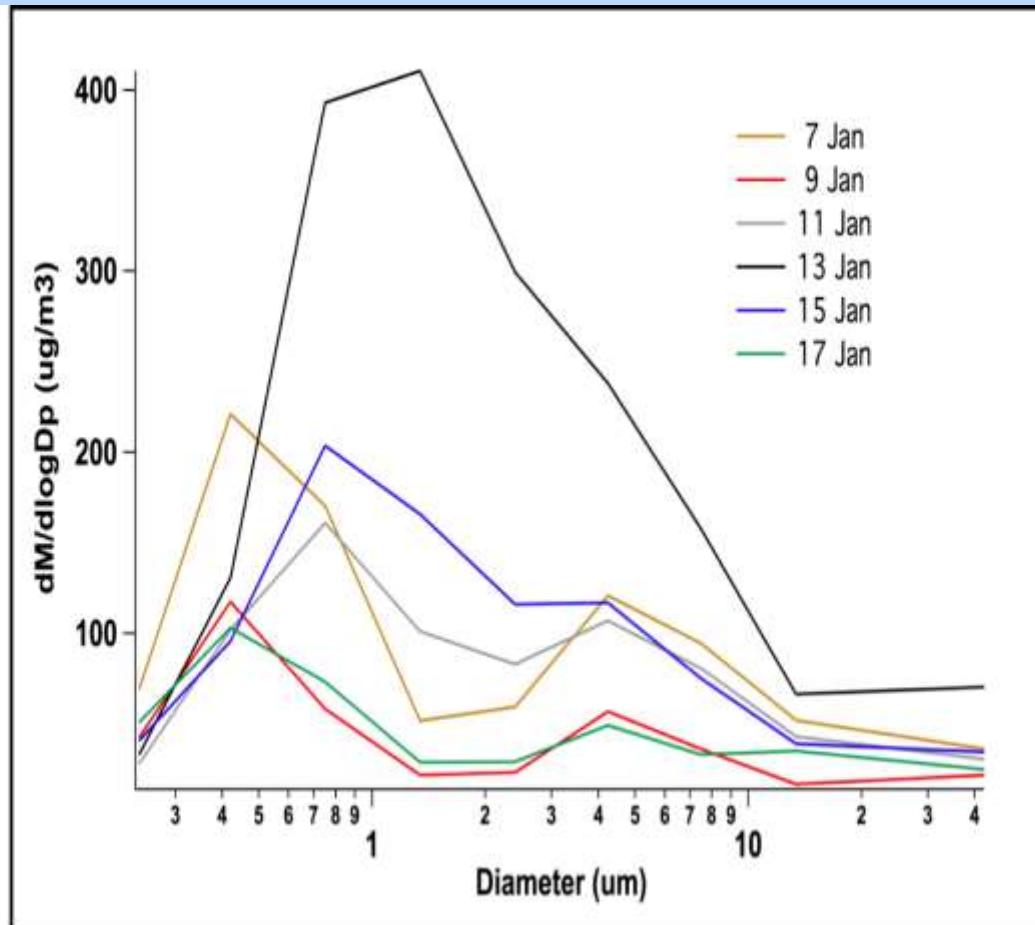


# 2013年1月颗粒物主要组分的变化

## Major Component Changes of PM in Jan 2013



## PM weight, density and diameter distribution during 7-17 Jan 2013



2013年1月份7-17日颗粒物质量浓度粒径分布

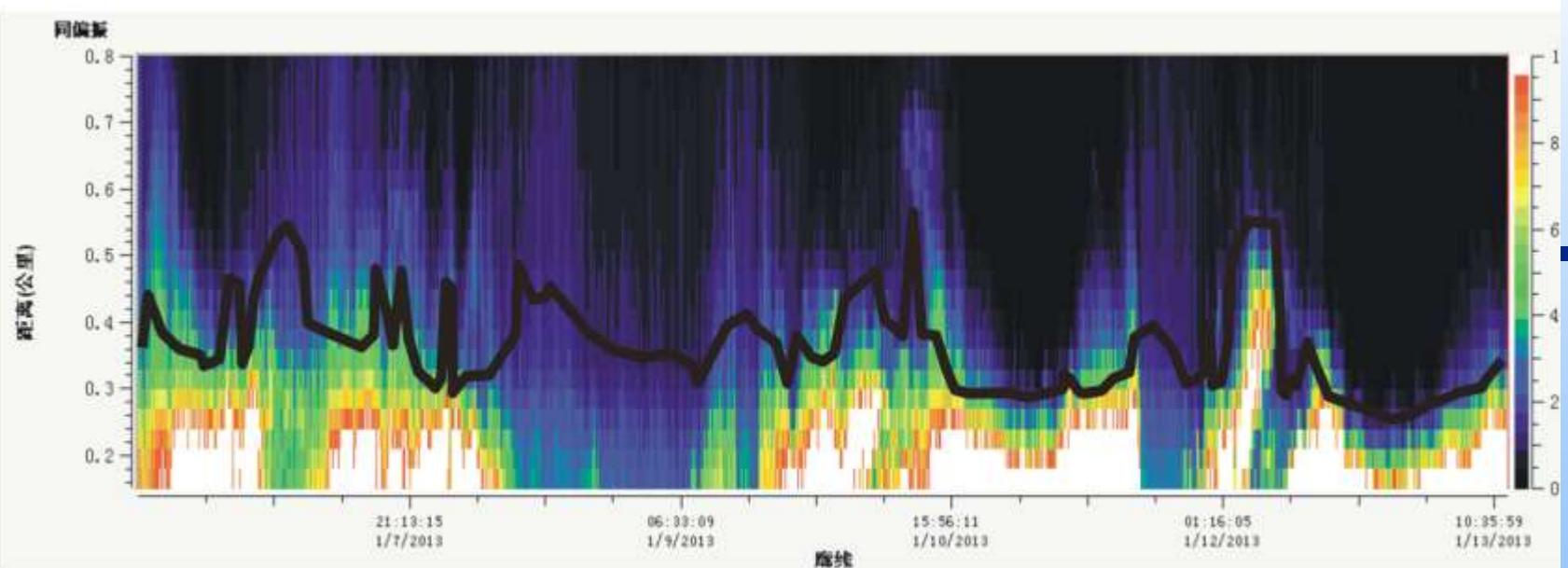
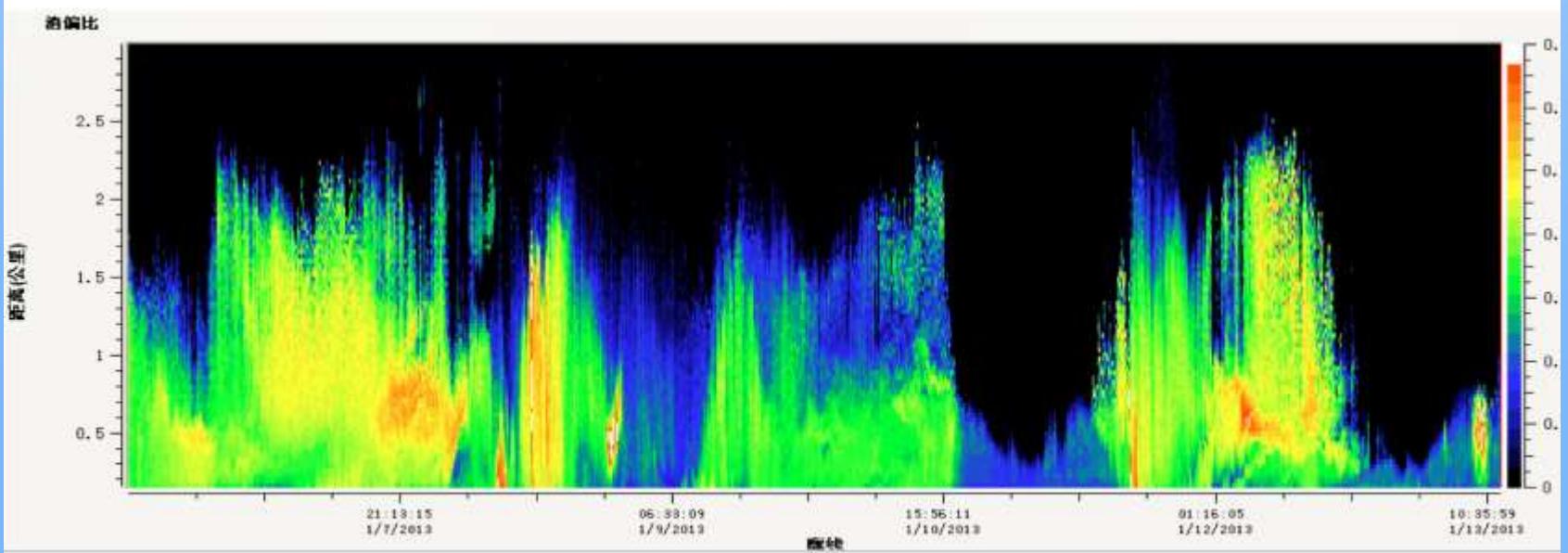


图 2 NBR 边界层高度 PBL 随时间变化图



消偏比随时间变化图

# 新标准带来的挑战 Challenges brought by new standard

## 113个环保重点城市达标情况 Attainment status of 113 key cities

年份	统计方法	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	整体评价
2010	达标城市数	100	78	22	18
	达标城市比例	88.5%	69.0%	19.5%	15.9%
2011	达标城市数	105	76	25	21
	达标城市比例	92.9%	67.3%	22.1%	18.6%

<sup>(1)</sup>按“点位平均值”统计方法，评价标准为：GB3095-2012 的年均值标准

年份	统计方法	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	整体评价
2010	达标城市数	100	113	90	83
	达标城市比例	88.5%	100.0%	79.6%	73.5%
2011	达标城市数	105	113	99	95
	达标城市比例	92.9%	100.0%	87.6%	84.1%

<sup>(1)</sup>按“点位平均值”统计方法，评价标准为：GB3095-1996 的年均值标准

	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	O <sub>3</sub>	CO	综合评价
达标城市数	28	12	3	1	24	26	2
试点城市数	31	31	31	26	31	28	31
达标城市比例	90.3%	38.7%	9.7%	3.8%	77.4%	92.9%	6.5%

# 新标准带来的挑战 Challenges brought by new standard

## 113个环保重点城市达标情况 Attainment status of 113 key cities

Year	Statistics method	SO2	NO2	PM10	Overall assessment
2010	Attainment cities	100	78	22	18
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Remark: assessment standard is GB3095-2012, using location average method

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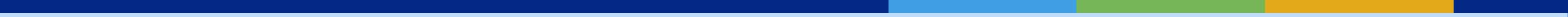
	SO2	NO2	PM10	PM2.5	O3	CO	Overall assessment
Attainment city	28	12	3	1	24	26	2
Pilot city	31	31	31	26	31	28	31
Attainment proportion	90.3%	38.7%	9.7%	3.85	77.4%	92.9%	6.5%

# 本届政府大气污染控制目标

## Air Pollution Control Target of the government

- 环境空气质量持续改善：年均值达标，日均值达标天数  
Ambient air quality keeps improved: attainment of annual average, attainment days of daily average  
**时间！幅度！Time!Extent!**
- 重污染过程发生频次减少、历时缩短、强度下降  
Frequency of serious pollution should decrease, with shorter duration and lower intensity.
- 公众的期待；减排的潜力；政府的能力  
Public expectation: emission reduction potential, government capability

# 策略选择 Strategy Choice



1. 改变发展方式，调整产业结构

Changing development mode, adjusting industry structure

2. 淘汰落后产能，减限过剩产能

Phasing outdated production capacity, limiting excessive capacity

3. 清洁能源结构，提高能源效率

Cleaning energy structure, improving energy efficiency

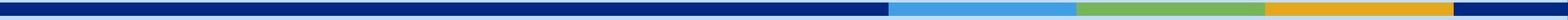
4. 多物协同削减，多源深度控制

Synergy reduction of pollutants, in-dept controlling of multi-resource

5. 建立预警体系，应对灰霾天气

Establishing alarm system, dealing with hazy episode

# 策略选择



6. 健全法规标准，严格执法监督

Improving regulations and standard, strict enforcement and monitoring

7. 发挥市场作用，完善经济政策

Exerting market mechanism, improving economy policies

8. 区域联防联控，城市强化责任

Regional management and collaboration, strengthening urban responsibility

9. 企业守法自律，创新升级达标

Enterprises abiding by laws and rules, ensuring attainment through upgrading and innovation

10. 信息公开共享，全民参与治污

Sharing information with the public, involving participation of the public

# 京津冀地区大气重污染过程应急关键技术研究及应用

Study on key emergency technology and application for serious pollution in BTH region

## 项目目标

建立大气重污染过程的判定指标体系，突破识别和解析重污染过程发生、发展、维持、消散等各阶段警兆特征的过程诊断和识别研判技术，研发大气重污染过程预报预警及应急预案评估技术；

Establishing judgment index system of serious air pollution, achieving breakthrough on procedure diagnosis and judgment technology of recognizing and analyzing alarm symptom of different stages including happening, development, maintaining and elimination, researching on forecast alarm and emergency pre-assessment technology

研究提出提前36~48小时的移动污染源、重点工业源和其它开放源的重污染应急预案及技术导则；

Research on serious pollution emergency plan and technology guideline for mobile resource, key industrial resource and other open pollution resource of 36-48 hours in advance

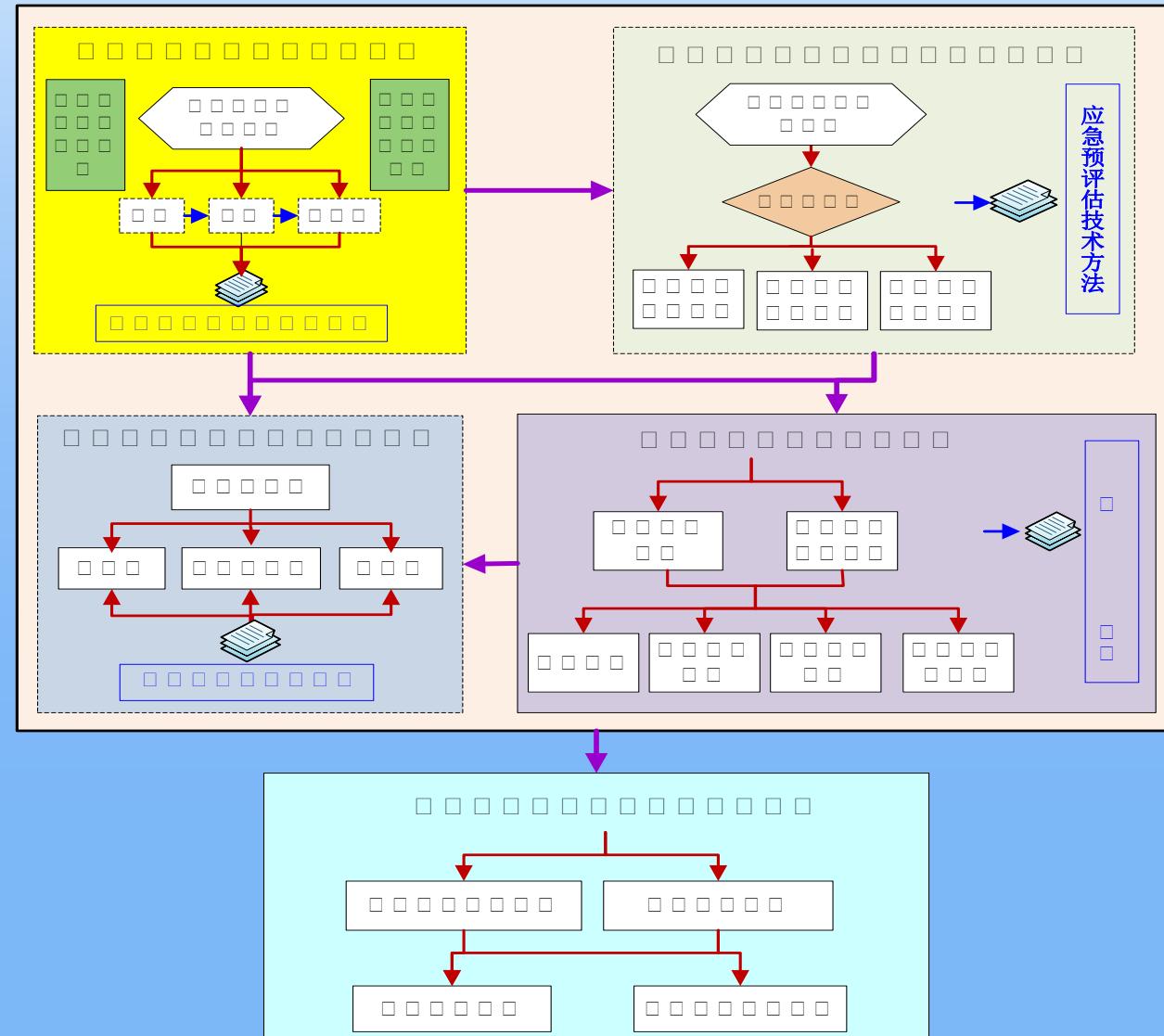
实现对2013年冬季和2014年夏季京津冀地区典型重污染过程应急预案的示范应用，使城市和区域的大气重污染过程得到有效缓解和抑制。

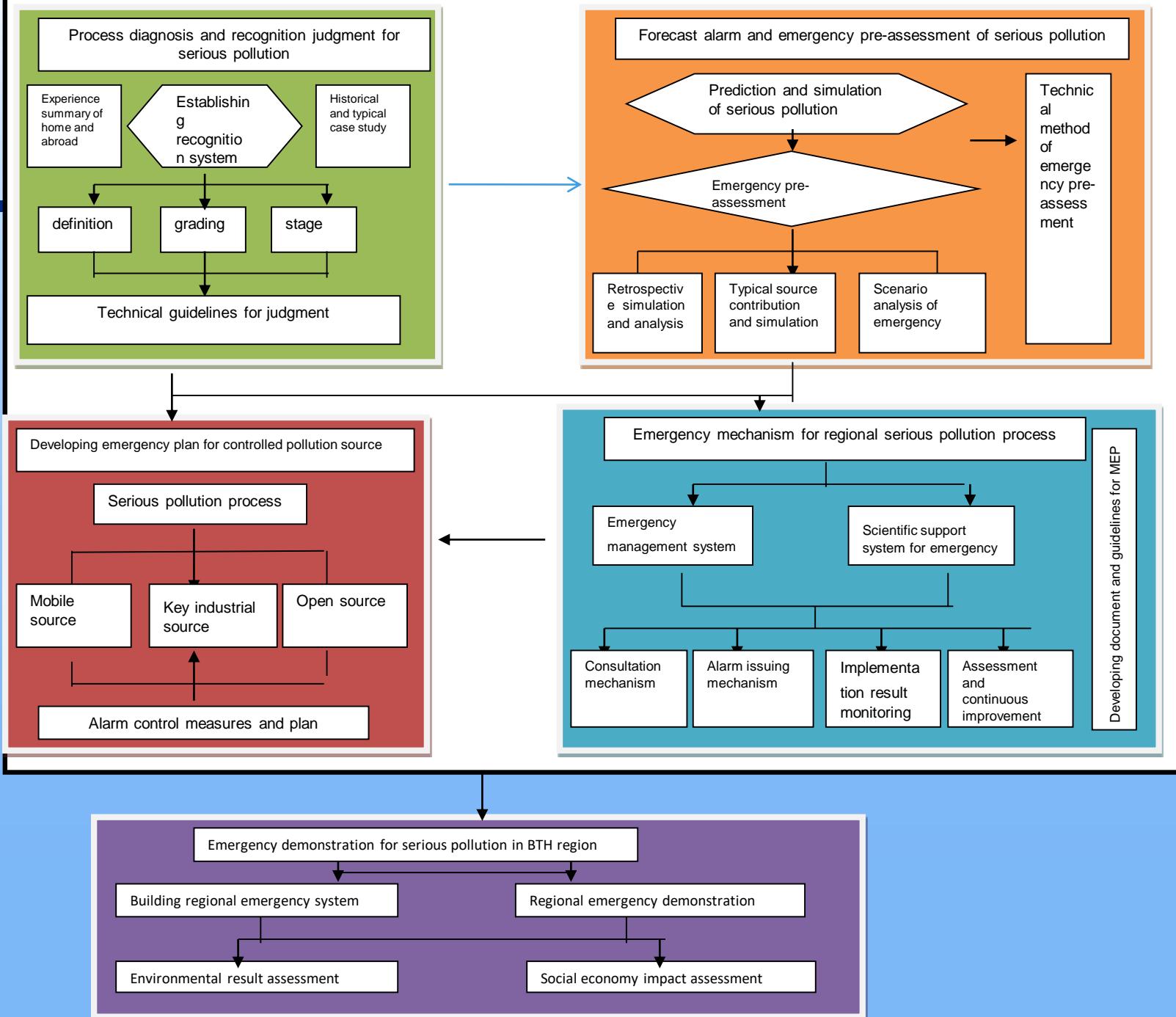
Demonstration for typical serious pollution emergency plan in 2013 winter and 2014 summer in BTH region, effectively alleviating and constraining urban and regional air pollution

# 京津冀地区大气重污染过程应急关键技术研究及应用

## Study on key emergency technology and application for serious pollution in BTH region

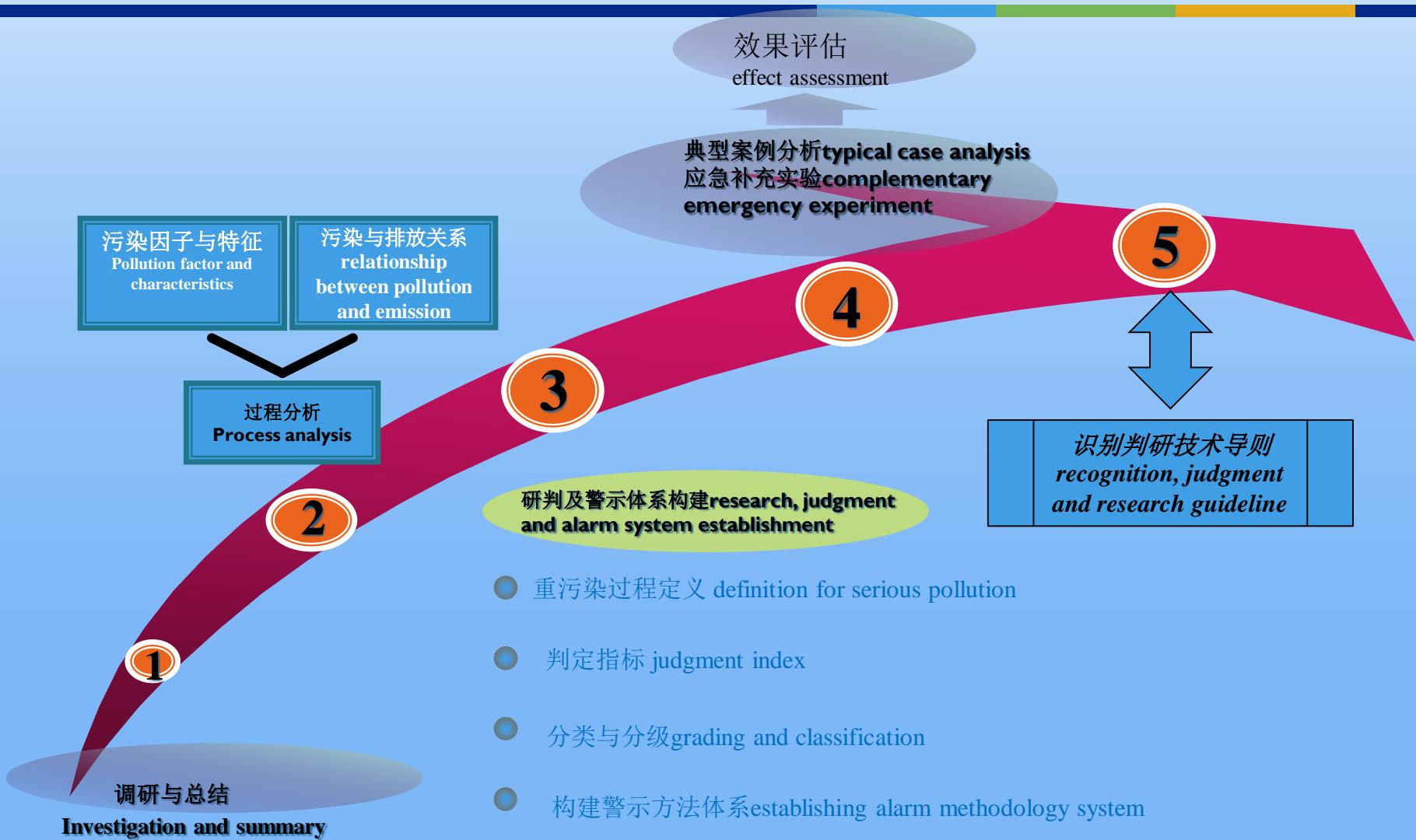
Technical  
route





# 任务1：大气重污染过程诊断及识别研判综合技术研究

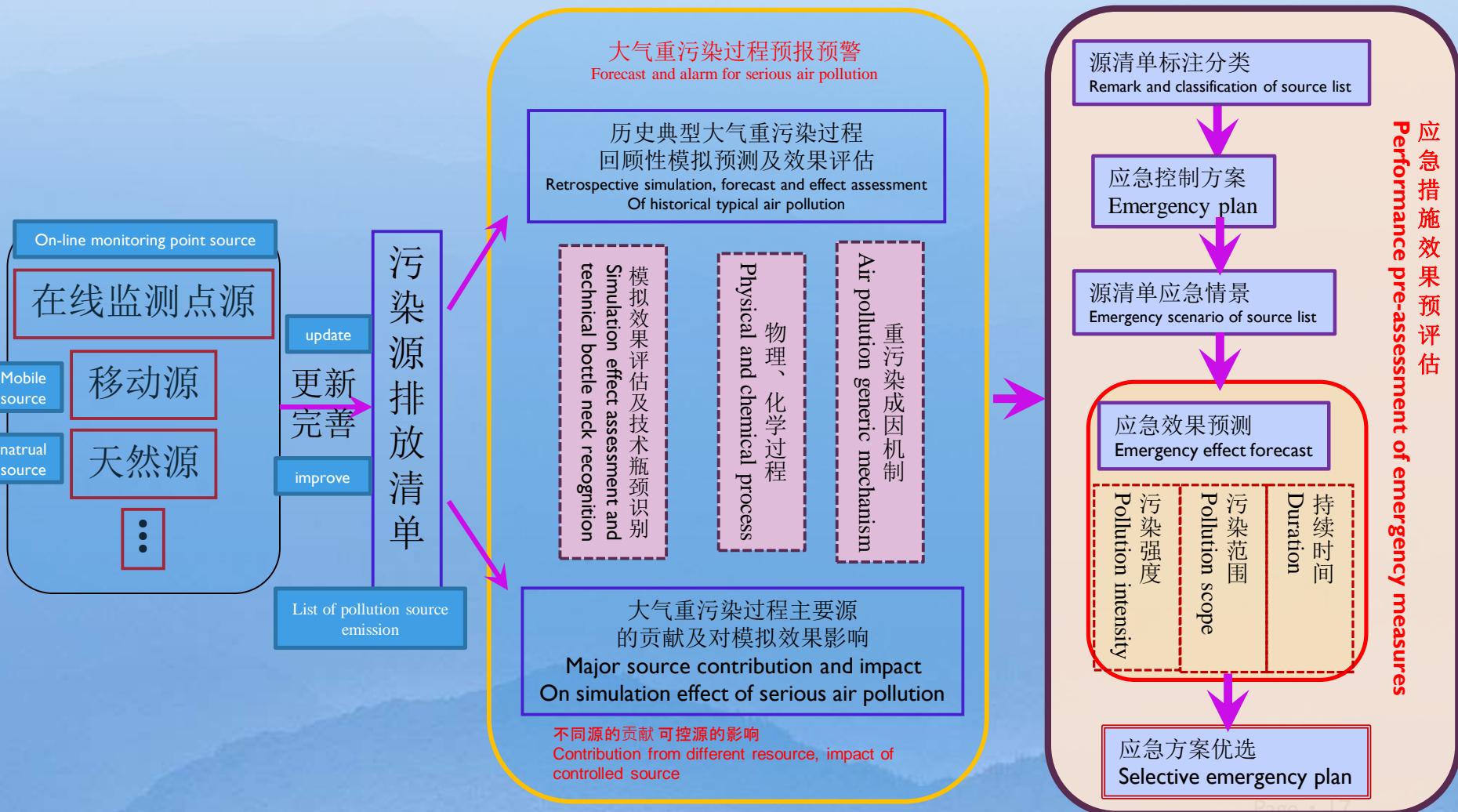
Task1: diagnosis, recognition, research and judgment integrated technology and research for serious air pollution



# 任务 2：大气重污染过程预报预警及应急预评估技术研究

Task 2: Study on forecast, alarm and emergency pre-assessment technology of serious air pollution

应急措施效果预评估  
Performance pre-assessment of emergency measures



# 任务3：可控污染源应急控制方案的编制技术研究

## Task 3: Technical study on development of controlled source emergency plan

编制主要可控污染源动态排放清单

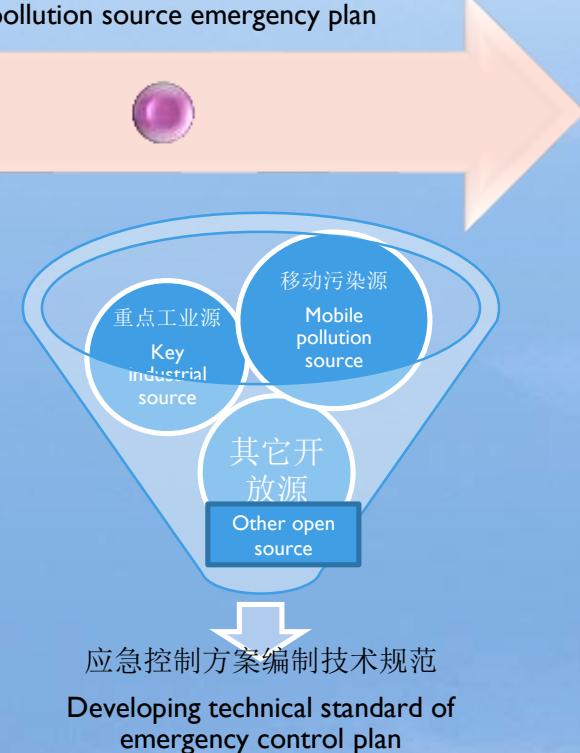
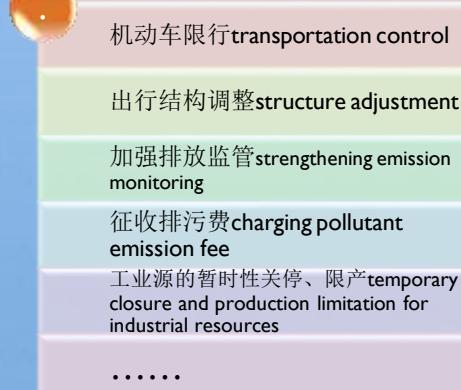
Develop dynamic emission list of major controlled pollution source

建立主要可控源控制措施数据库

Establishing control measure database for major controlled source

污染源应急控制方案编制技术规范

Developing technical standard Of pollution source emergency plan



## 任务4：区域重污染过程应急机制构建

## task 4: Establishing emergency mechanism of serious air pollution in BTH region



## 任务5：京津冀地区大气重污染过程的应急预案示范和效果评估

task5: emergency plan demonstration and effect assessment of serious air pollution in BTH region

区域重污染过程应急方案选择和预评估

**Emergency plan selection and pre-assessment of serious regional air pollution**

重污染过程应急方案示范应用

**Emergency plan demonstration of serious air pollution**

京津冀区域重污染过程应急示范效果评估与社会经济影响分析

**Emergency plan demonstration effect assessment and social economy impact analysis of serious air pollution in BTH region**

# 预期成果 expected achievement



- ◆ 建立大气重污染过程的判定指标体系，突破过程诊断和识别研判技术；

Establishing judgment index system of serious air pollution, achieving a breakthrough on procedure diagnosis and recognition judgment technology

- ◆ 建立大气重污染预报预警和应急预评估技术方法；

Establishing forecast alarm and emergency pre-assessment methodology of serious air pollution

- ◆ 研究提出提前36~48小时的移动污染源、重点工业源和其它开放源的重污染应急预案及技术导则；

Proposing 36-48 hours in advance emergency plan and technical guideline for mobile source, key industrial source and other open source of serious air pollution

- ◆ 实现对2013年冬季和2014年夏季京津冀地区典型重污染过程的模拟预测和应急方案的示范应用，使城市和区域的大气重污染过程得到有效缓解和抑制；

Implementing demonstration of simulation forecast and emergency plan of serious air pollution in 2013 winter and 2014 summer in BTH region aiming to alleviate and constrain urban and regional air pollution

- ◆ 构建京津冀区域重污染过程应急体系，建立重污染过程成效评估技术。

Building emergency system of serious air pollution in BTH region , establishing effect assessment technology of serious air pollution.

谢谢！

Thank you!