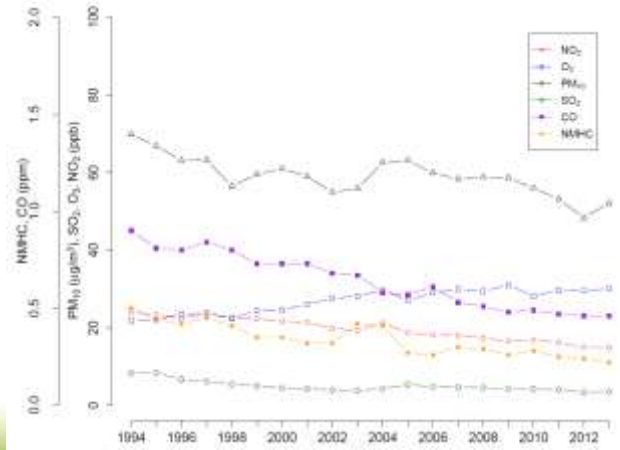




Introduction

- In these years, the air quality in Taiwan is better now.
- The ratio of long-range transportation air pollutant is higher than before.



particulate matter composition stations



The photo chemical stations



The mobile stations



The Air Quality in Taiwan





Briefing the Lulin station

23.51 N, 120.92 E ; 2862 m



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The New Platform



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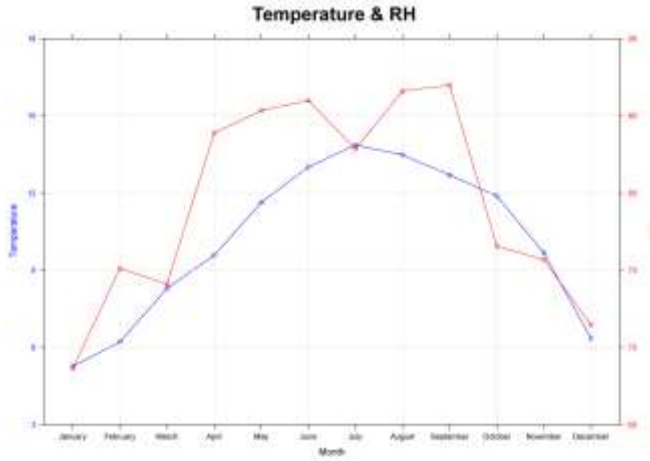


OPERATING UNDER WMO-GAW/NOAA PROTOCOLS



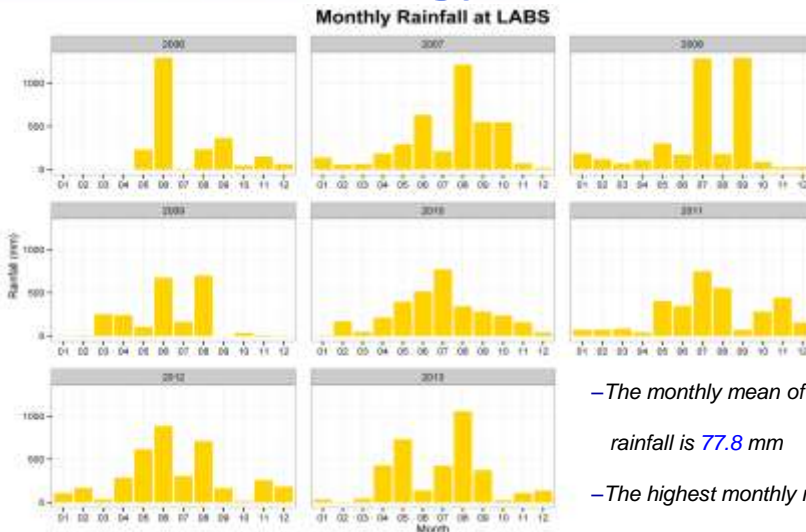
Instrument, Manufacturer, Model	
Aerosols	Model
Particle mass concentration	TEOM Particulate mass monitor, R&P 1400 (PM ₁₀ , PM _{2.5})
aerosol chemical components	Aerosol sampling, R&P, 3500
NOAA CPD aerosol system	Aerosol sampling, R&P, 2025D
	PSAP, TSI 3010 CPC, TSI 3563 integrating nephelometer
Radiation	Model
7 spectral channels	Sunphotometer, Cimel, CE-318
6 spectral channels	Shadow band, Yankee, MFR-7
UVA	UVA, Solar Light, MODEL 501
UVB	UV-Biometer, Solar Light,
Total flux	Solar radiation sensor, MetOne, 96-1
	Kipp&Zonen CMP-21 pyranometer
	Kipp&Zonen CGR-4 pyrgeometer
Direct sun radiation	Kipp&Zonen CH-1 pyrheliometer
Gas	Model
O ₃	Ozone analyzer, Ecotech, ML9810B
CO	CO monitor, TraceAnalytical, TA-3000R
	CO monitor, Horiba, APMA-360
CO ₂	CO ₂ analyzer, LI-COR, LI-7000
Oxides of Nitrogen	Oxides of Nitrogen analyzer family, ECOTECH, EC9841T (NO _x), EC9842 (NH ₃), EC9843 (NO _x)
SO ₂	Trace SO2 analyzer, ECOTECH, EC9850T
CFCs	Gas Chromatography, Agilent, HP6890N
Air sampling	NOAA/ESRL/GMD CCGG flask sampler
Mercury	Model
Gaseous Elemental Mercury	Cold Vapor Atomic Fluorescence Spectrometry, Tekran ,
Reactive Gaseous Mercury	Mercury Speciation Unit, Tekran , 1130
Particulate Mercury	Particulate Mercury Unit, Tekran , 1135
Precipitation chemistry	Model
Rainwater sample	Rain sampler
Met.	Model
Visibility	Present Weather Detector, VAISALA, PWD22
Meteorological Monitoring System	MetOne (Temp., Humidity, Press., Rain, Wind)

Meteorology : Temperature, RH



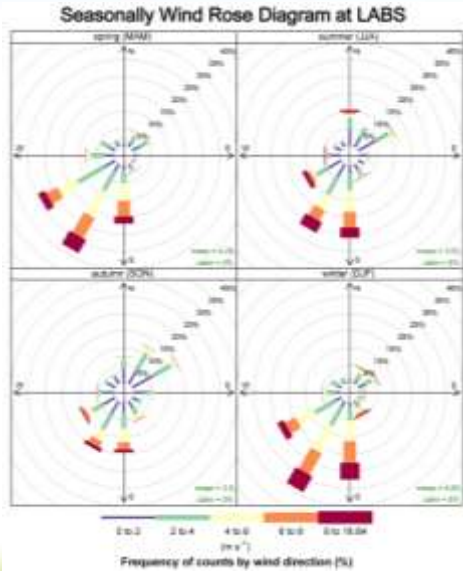
- The monthly mean of Temperature **10.1°C**
- Relative Humidity **78%**

Meteorology – Rainfall



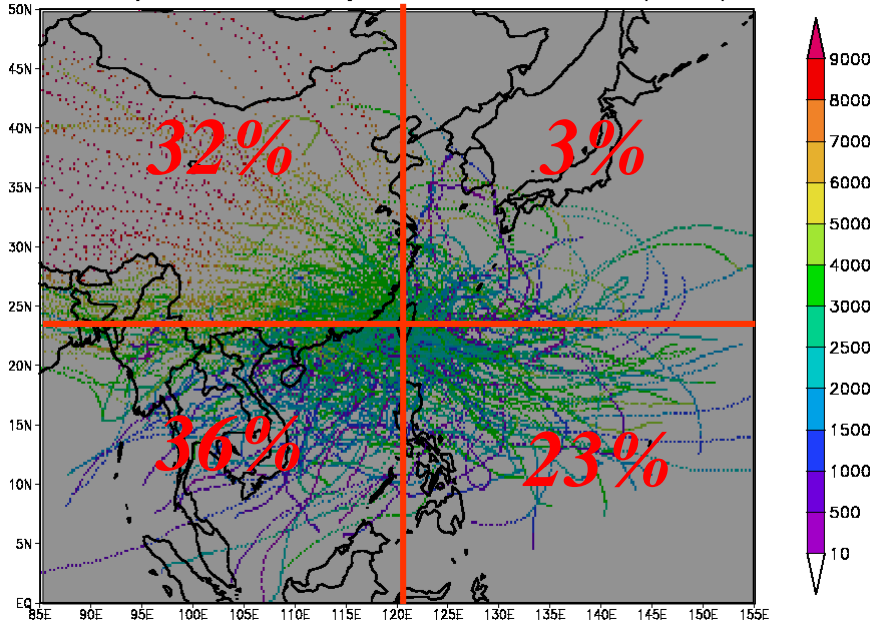
- The monthly mean of rainfall is **77.8 mm**
- The highest monthly mean of rainfall **1300 mm**

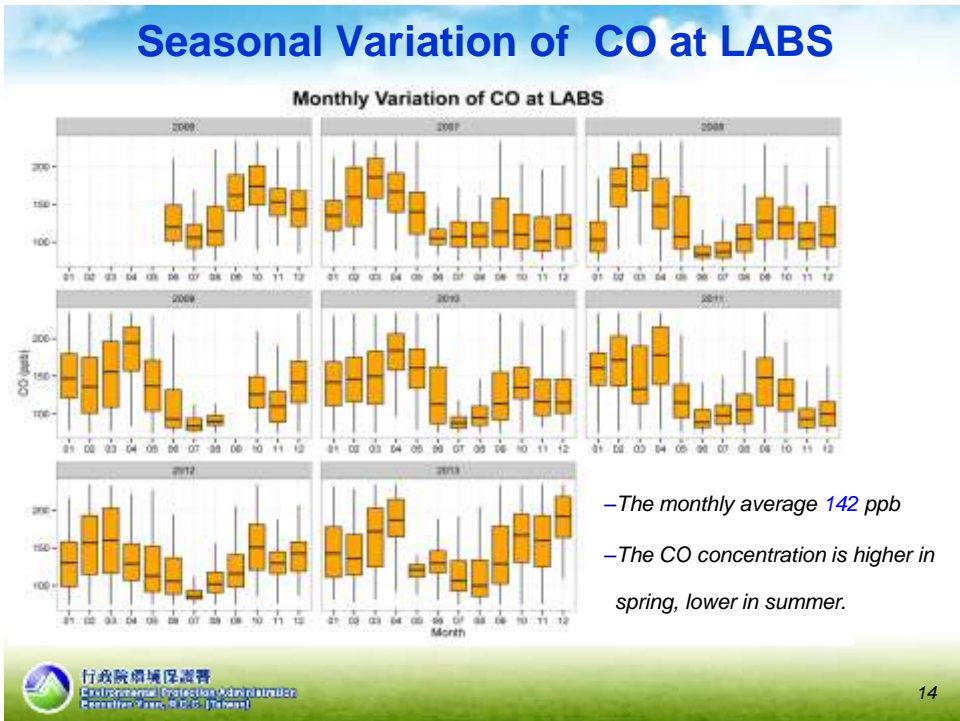
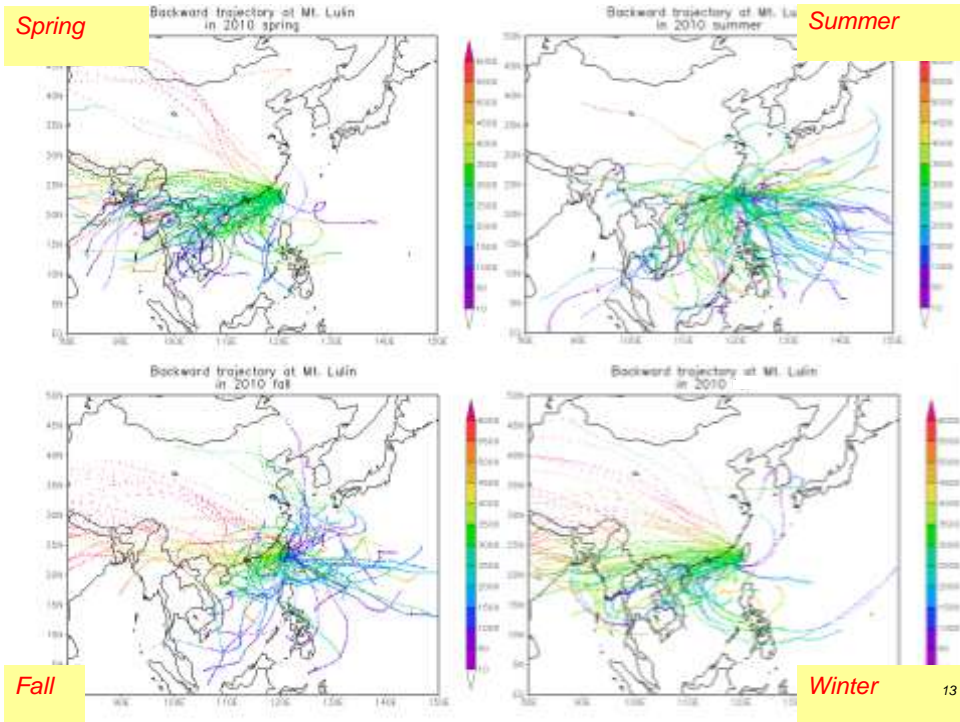
Meteorology – WS,WD in four seasons



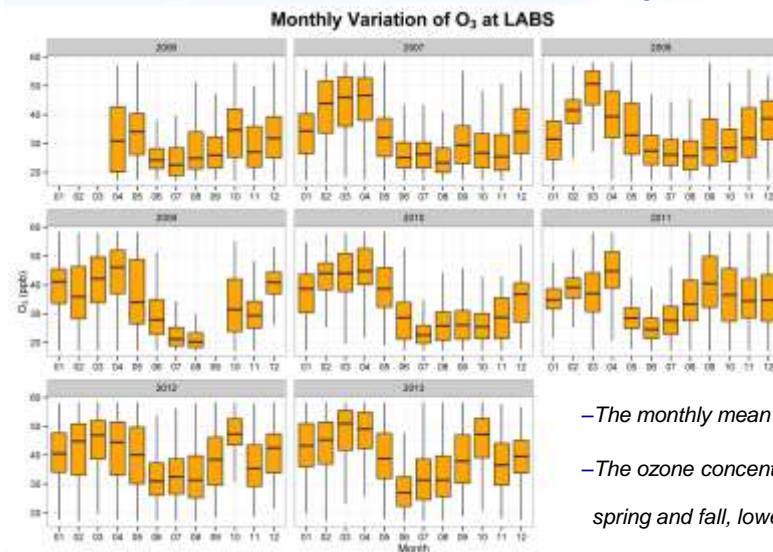
– Prevailing winds are from SW and NE.

5-day backward trajectories in Mt. Lulin(2862)





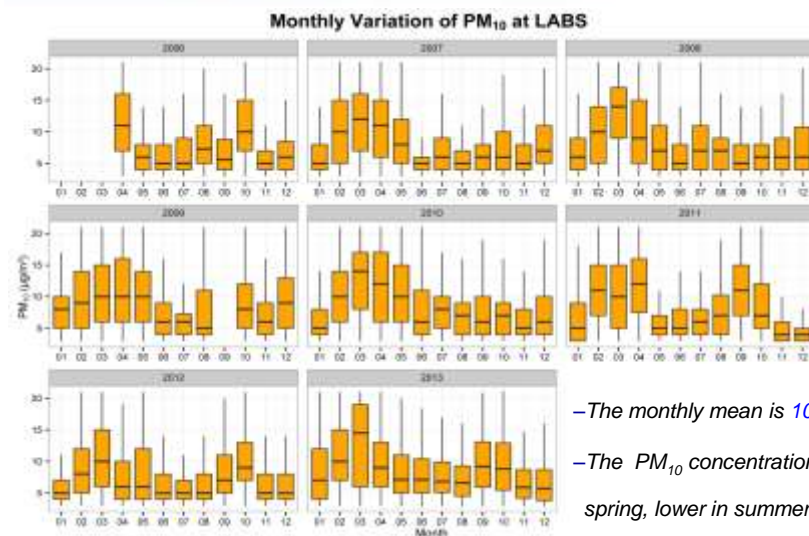
Seasonal Variation of O₃ at LABS



– The monthly mean is 33 ppb

– The ozone concentration is higher in spring and fall, lower in summer.

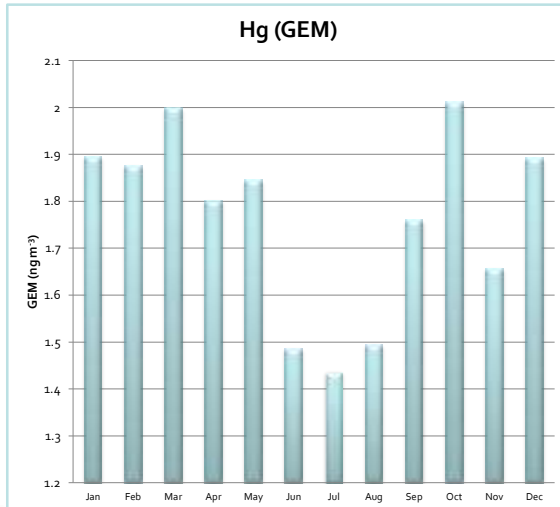
Seasonal Variation of PM₁₀ at LABS



– The monthly mean is 10 µg/m³

– The PM₁₀ concentration is higher in spring, lower in summer.

Seasonal Variation of GEM at LABS

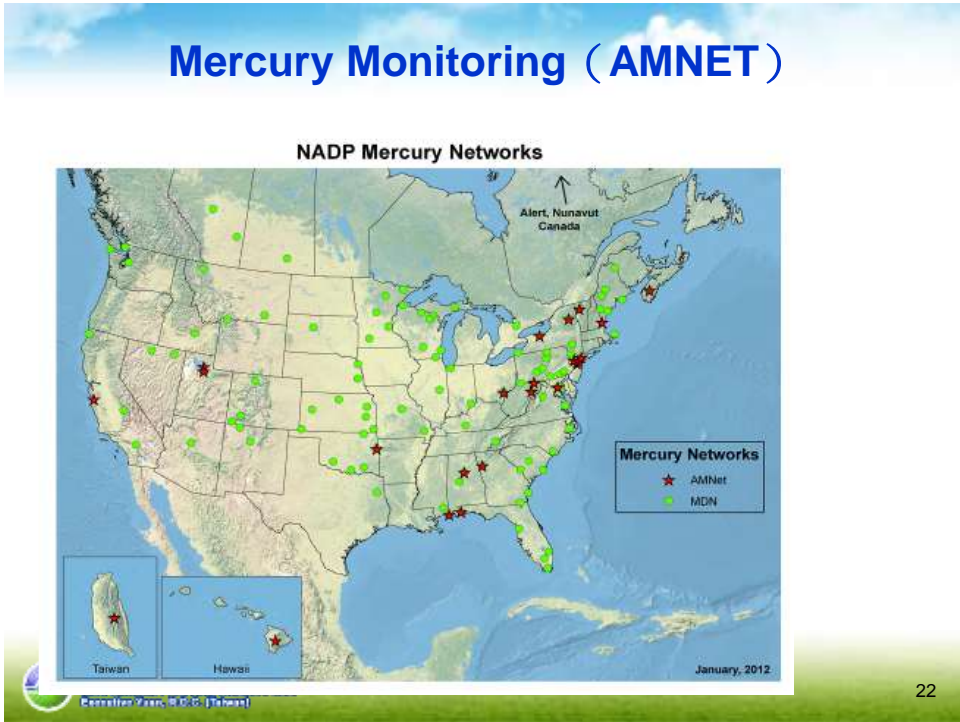
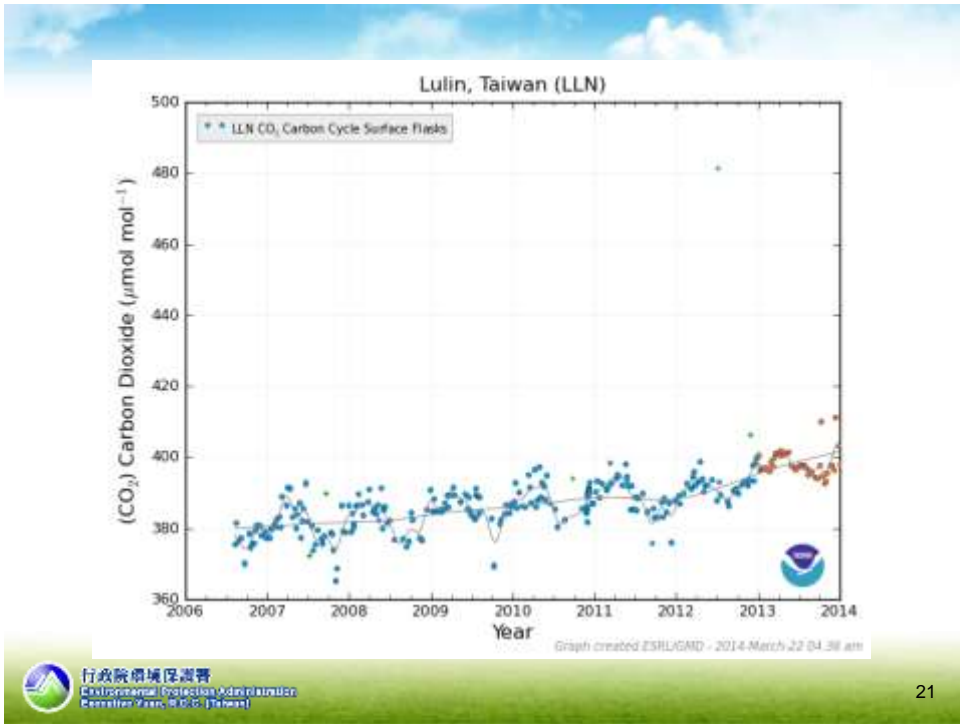


– The mean concentration of GEM is 1.69 ng / m^3

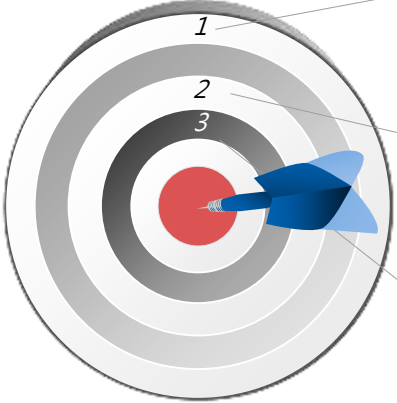
– The GEM concentration is higher in spring and fall, lower in summer.

International Collaborations

- *NASA* (National Aeronautics and Space Administration)
 - AERONET
 - MPLNET
- *NOAA* (National Oceanic and Atmospheric Administration of the United States)
 - Trace gas-Carbon Cycle Greenhouse Gases Group (CCGG)
- *USEPA*
 - Mercury Monitoring (NADP-AMNET)




Summery



Building up the air quality baseline in Taiwan

Understanding the long-range transport of air pollutants effect Taiwan

Cooperating with neighboring countries to exchange air pollutants data

 行政院環境保護署
Environmental Protection Administration
Republic of China (Taiwan)

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Welcome you to visit the LABS!

Thank you!

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Website:
<http://lulin.tw>

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