

Monitoring of atmospheric mercury and deposition in China

Xuewu Fu, Xinbin Feng, Hui Zhang、 Ben Yu, Xun Wang,

Xiaofang Lang, Xu Yang

Institute of Geochemistry, CAS

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Contents:

- Sampling sites and method
- Distributions of atmospheric Hg species over China
- Long-range transport of atmospheric Hg in China
- Atmospheric depositions

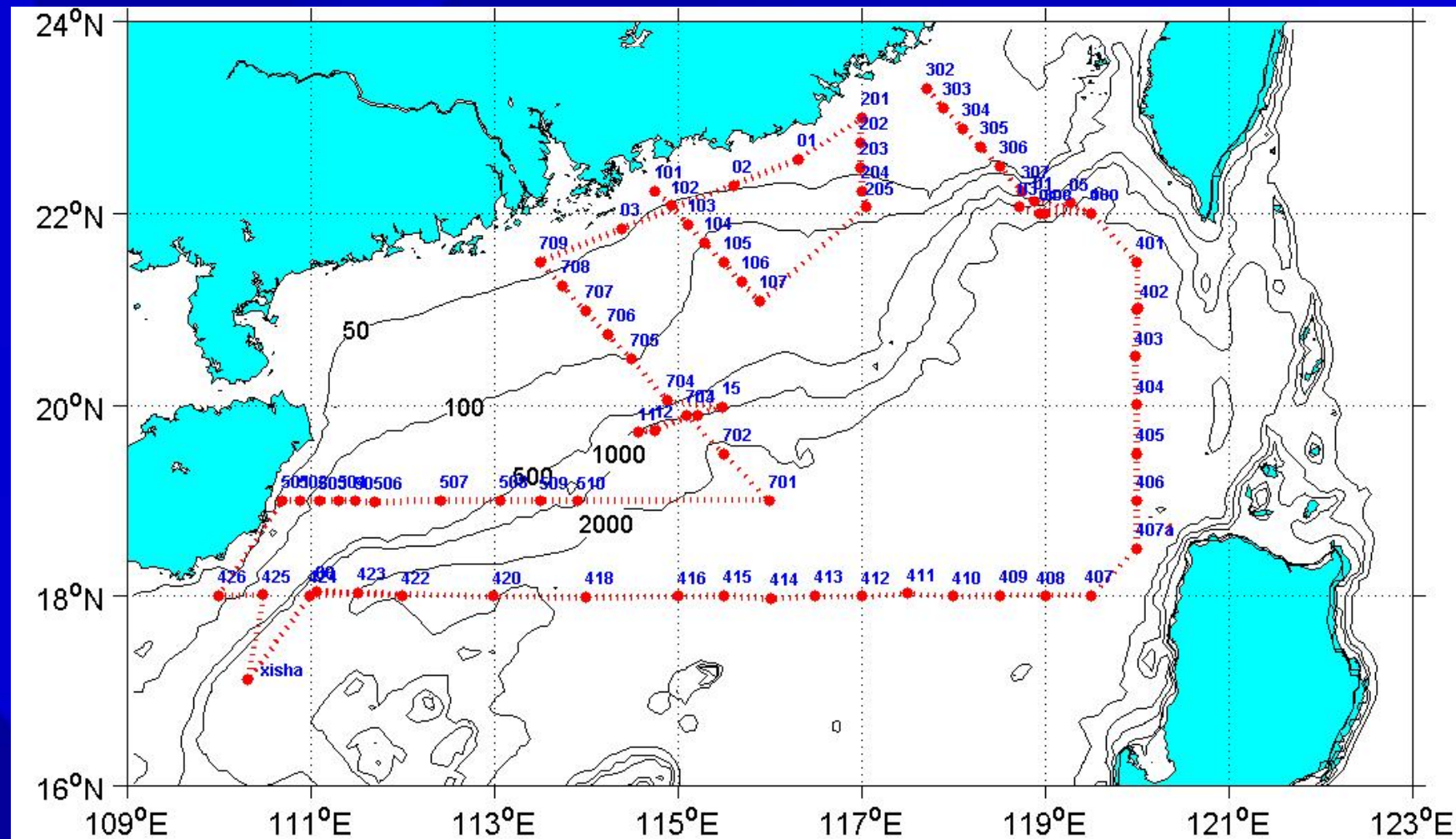
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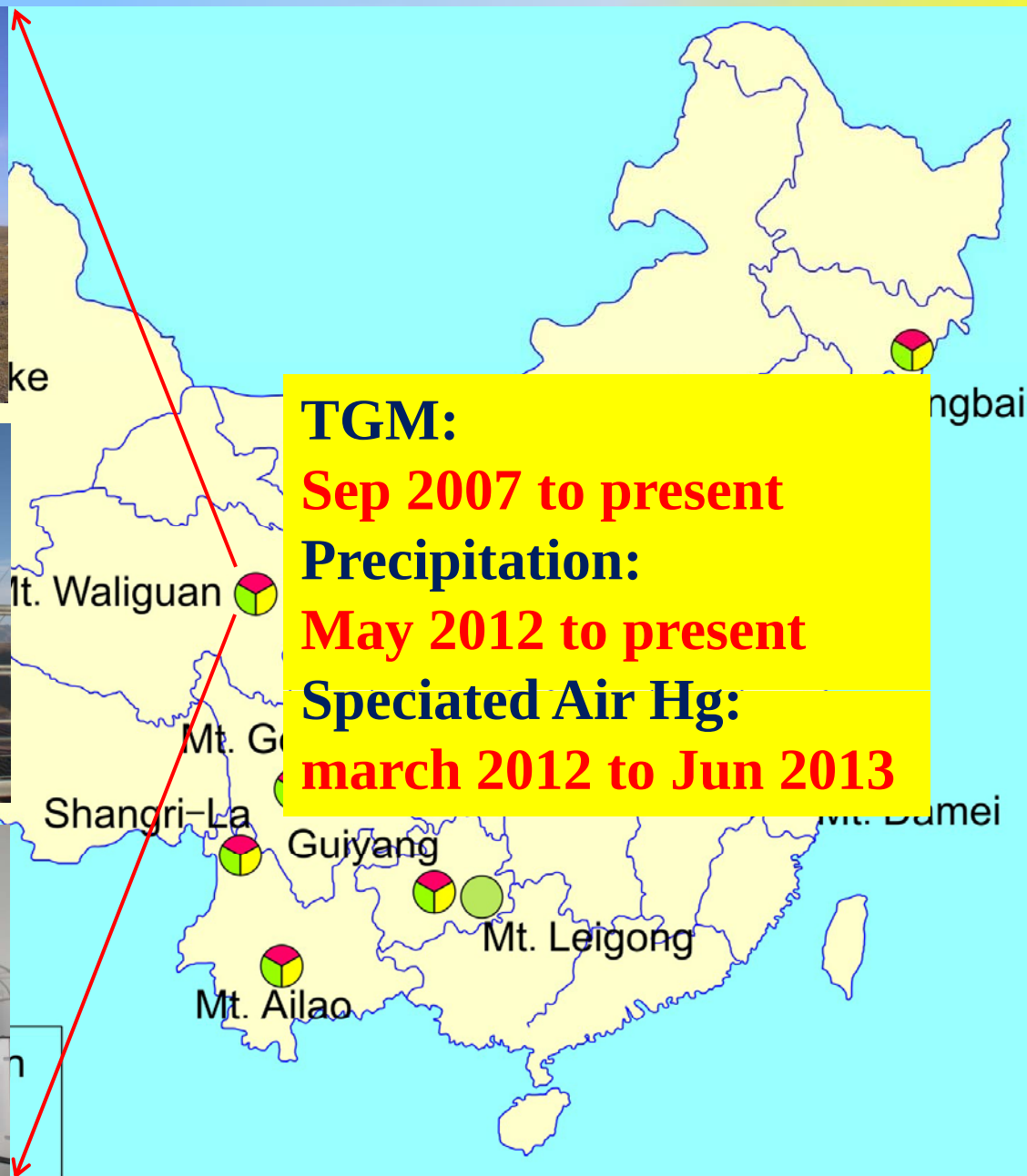
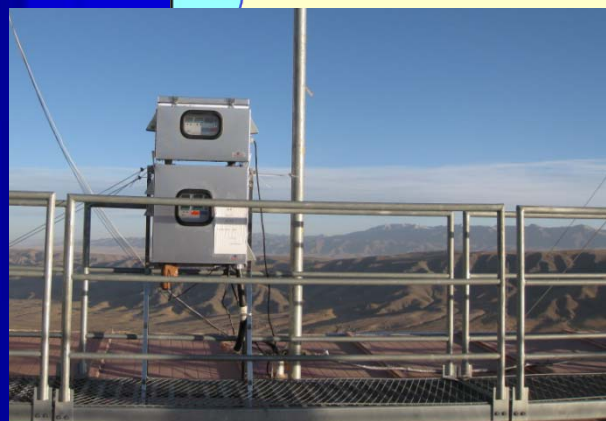
Mentoring stations in mainland China



Measurements of TGM in MBL during the SCS cruise in Aug 2007



Mt. Waliguan GAW Baseline station



Mt. Changbai station in northeast China



TGM:

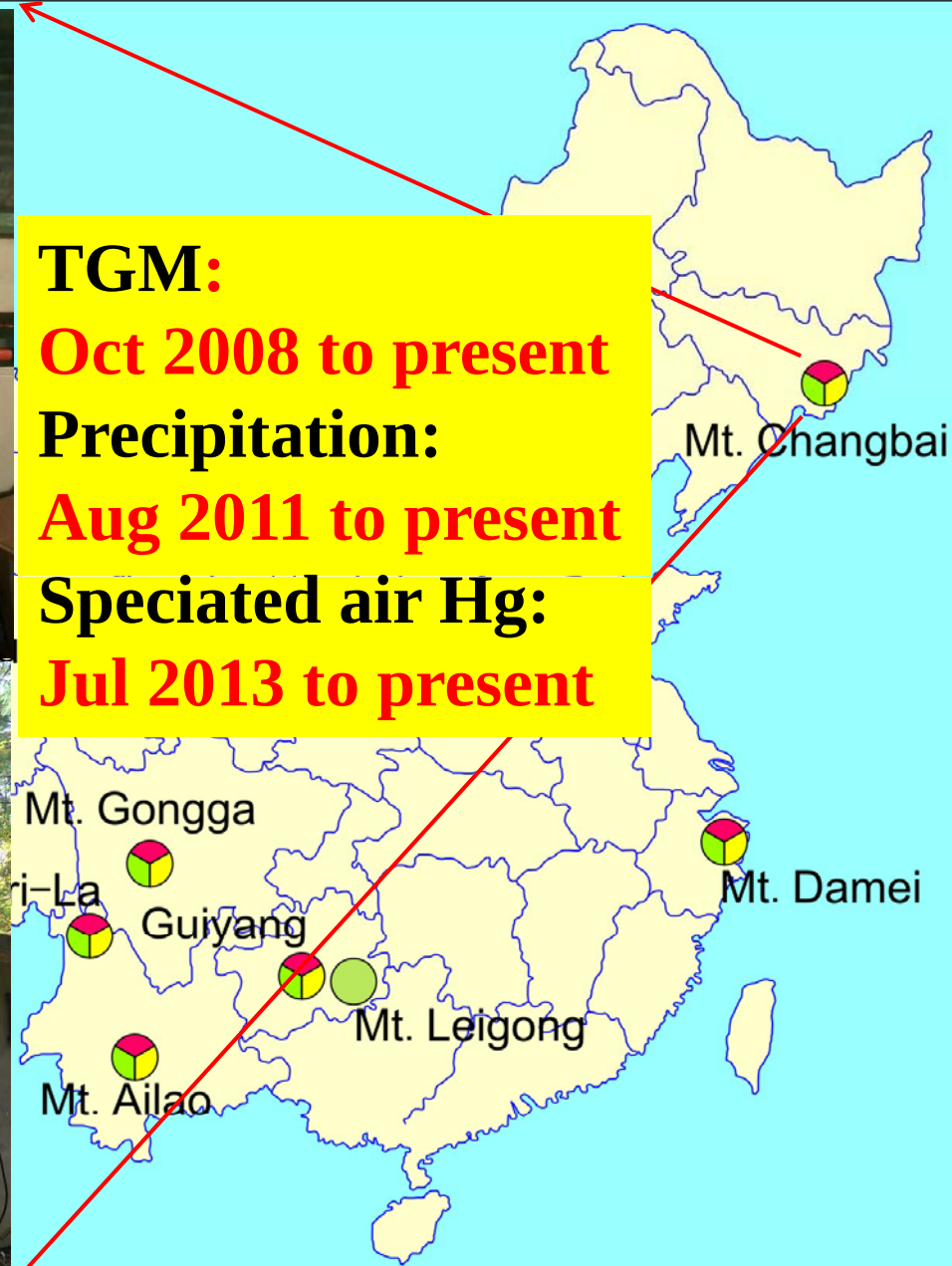
Oct 2008 to present

Precipitation:

Aug 2011 to present

Speciated air Hg:

Jul 2013 to present



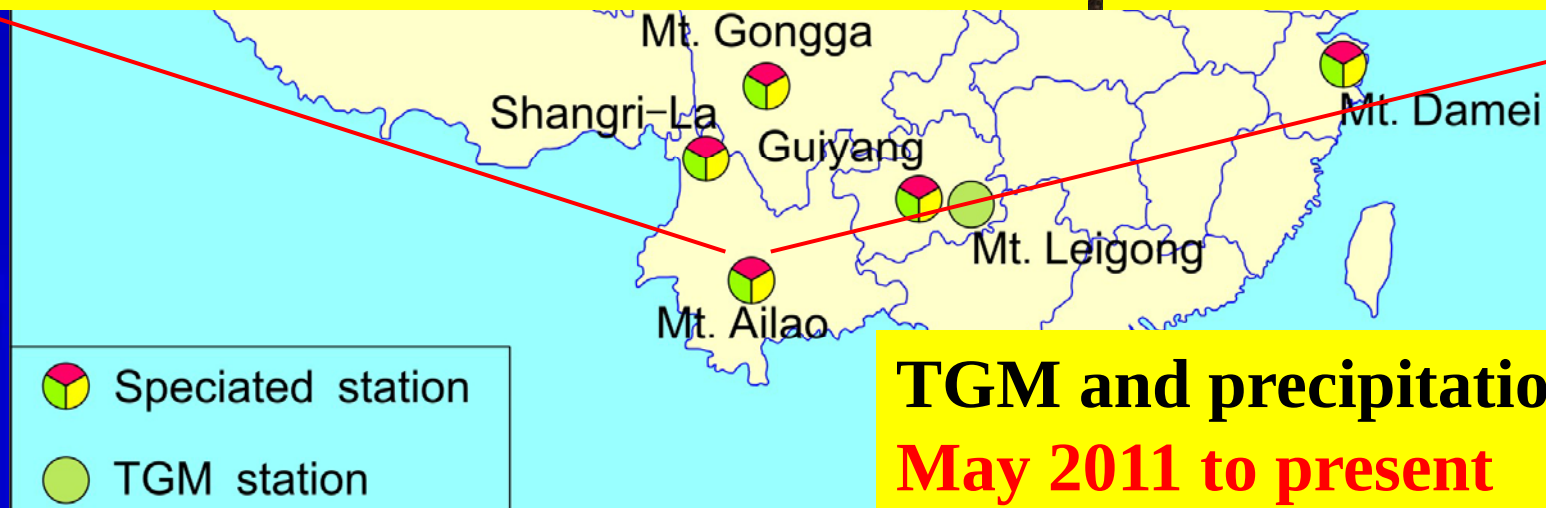
Mt. Ailao station in southwest China



Mt. Ailao Forest Ecosystem station

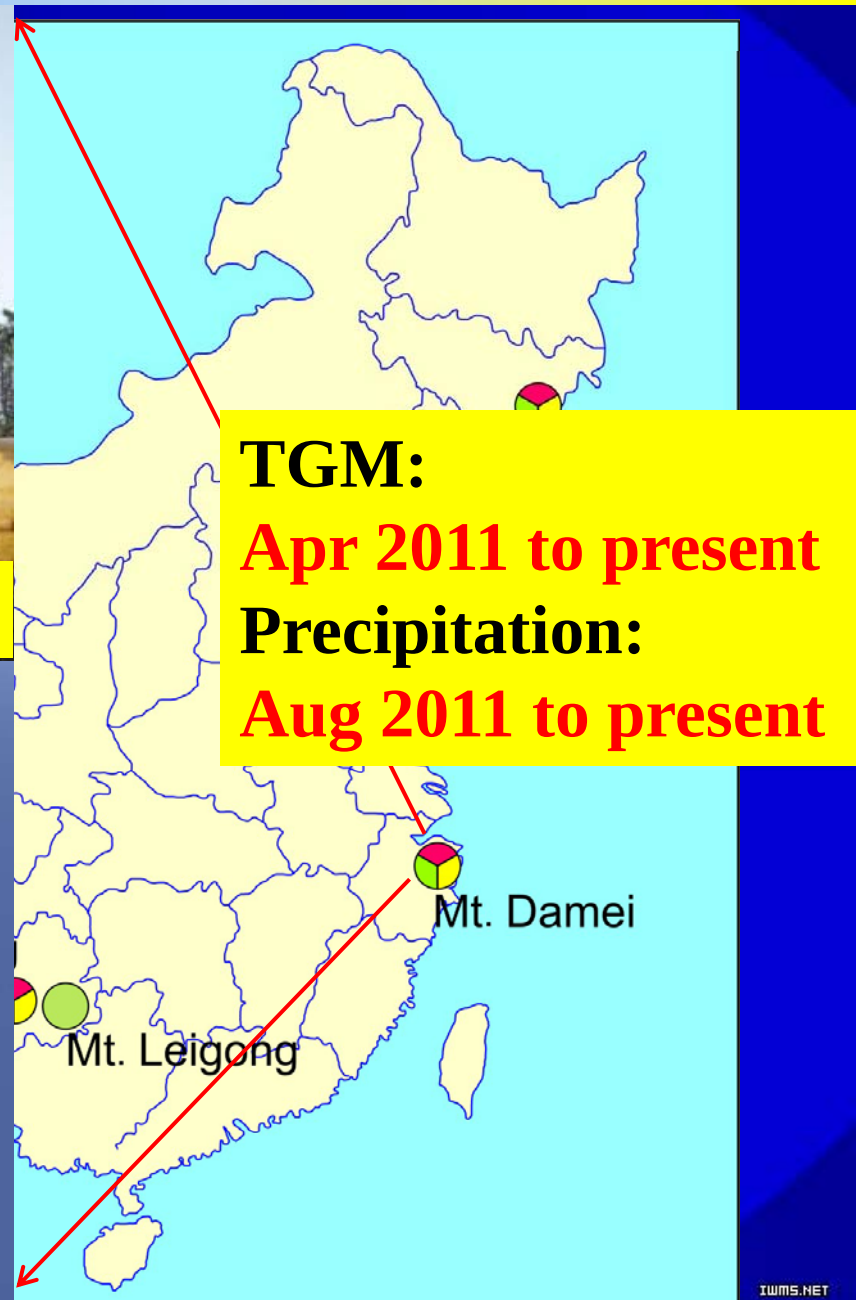
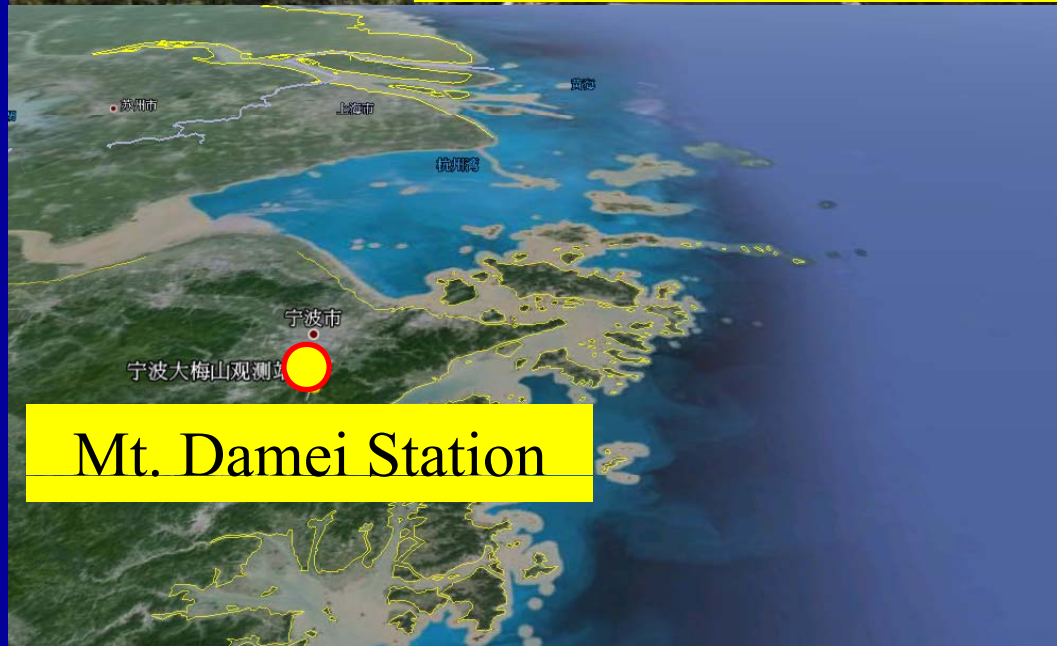


Experimental platform



TGM and precipitation:
May 2011 to present

Mt. Damei station in eastern China



Bayinbuluke station in northwest China



TGM:

Dec 2013 to present



Experimental platform

The grand grassland around the station



Length: 270km;
Width: 140 km;
Area: 2.4万km²

MGG, MLG, SRL, and GY stations

Mt. Gongga

05/2005-06/2007



05/2008-06/2009

Mt. Leigong



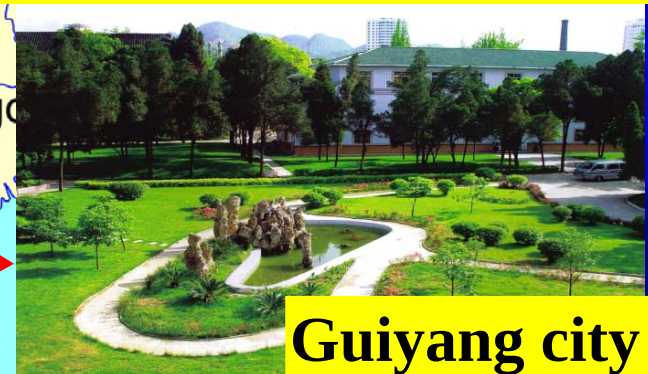
Shangri-La station



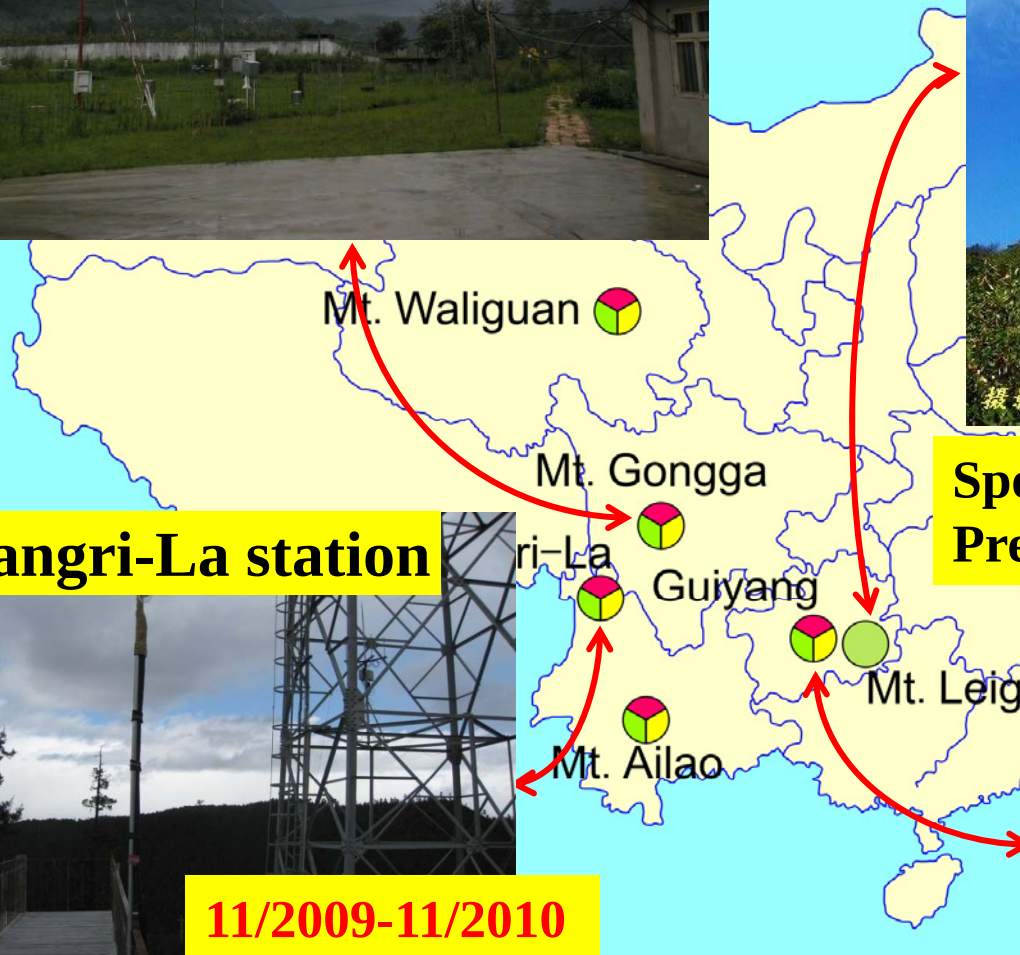
11/2009-11/2010

Speciated Hg: 08-12, 2009

Precipitation: 09/2012-08/2013



Guiyang city



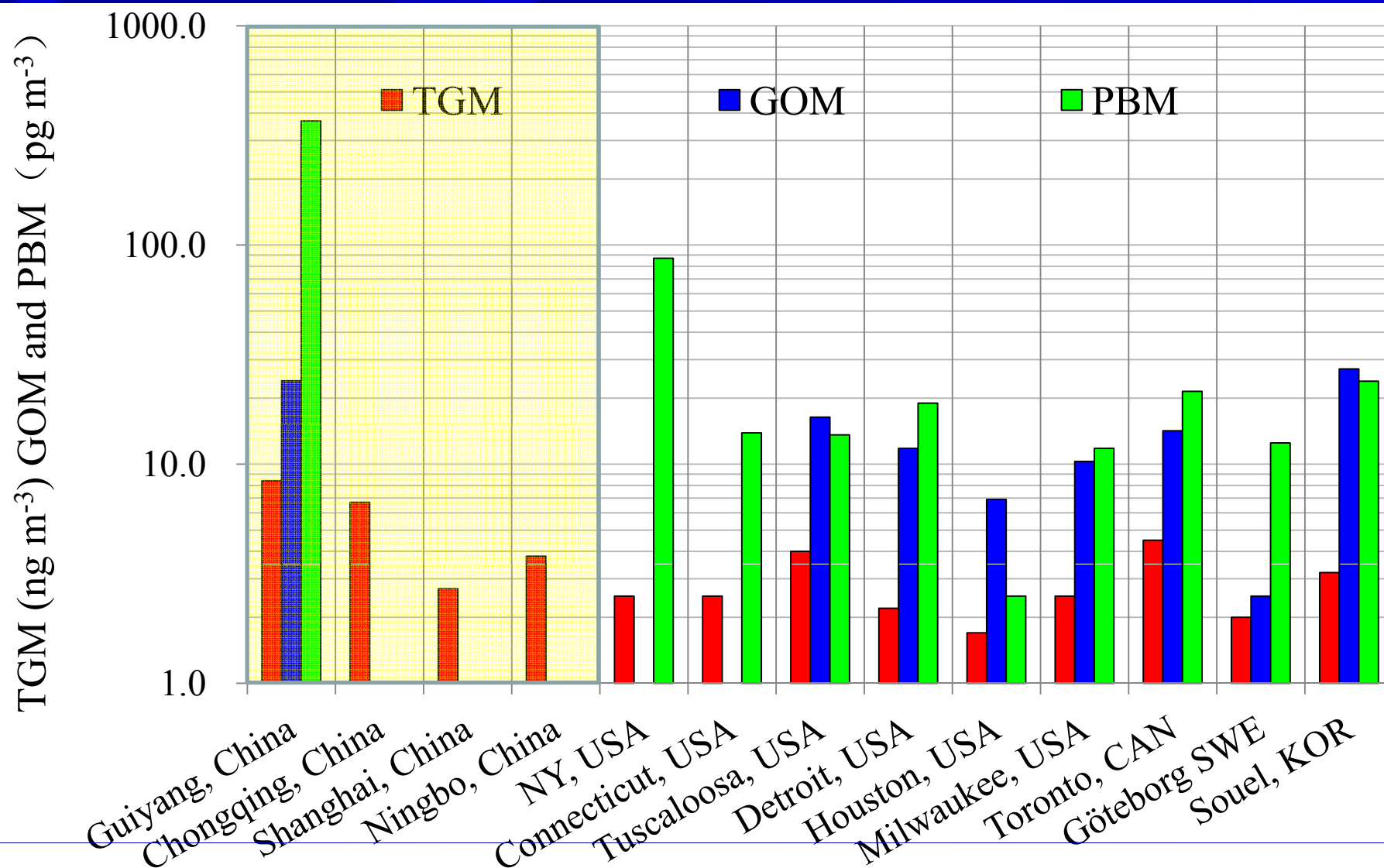
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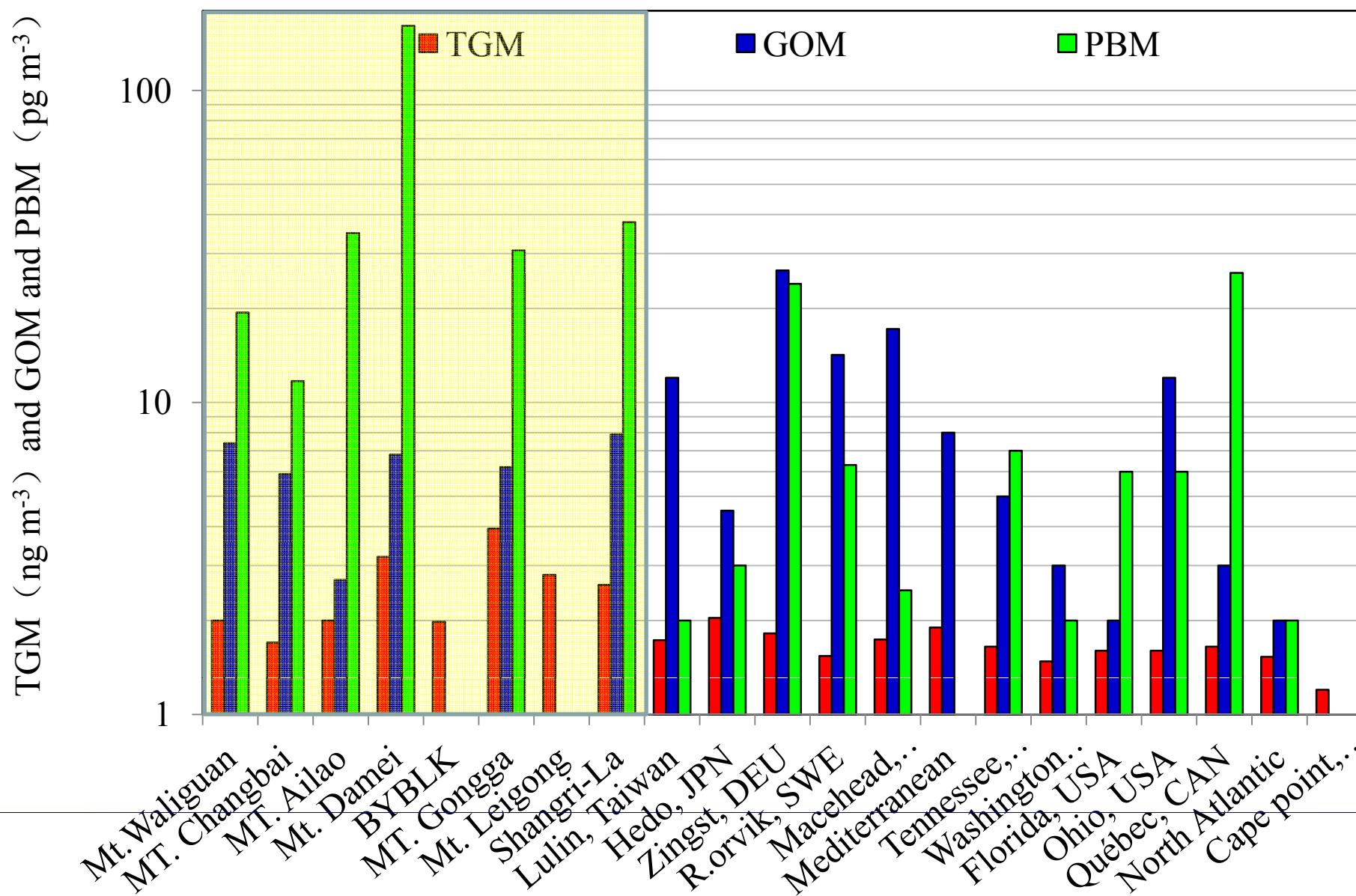
Levels of atmospheric Hg in China

Atmospheric Hg in China and North Hemisphere				
	Classification	TGM	GOM	PBM
		(ng/m ³)	(pg/m ³)	(pg/m ³)
Mt. WLG	Rural	2.0	7.4	19.4
Mt. Changbai	Rural	1.7	5.9	11.7
Mt. Ailao	Rural	2.0	2.7	34.9
Mt. Damei	Rural	3.2	6.8	161
Bayinbuluke	Rural	2.0		
Shangri-La	Rural	2.6	7.9	37.8
Mt. Leigong	Rural	2.8		
Mt. Gongga	Rural	3.9	6.2	30.7
Guiyang	Urban	9.9	35.7	368.0
North hemisphere	Rural	1.5 – 1.7	0.5 – 12.4	1.6 – 13.7
North Hemisphere	Urban	3.2	17.7	41.0

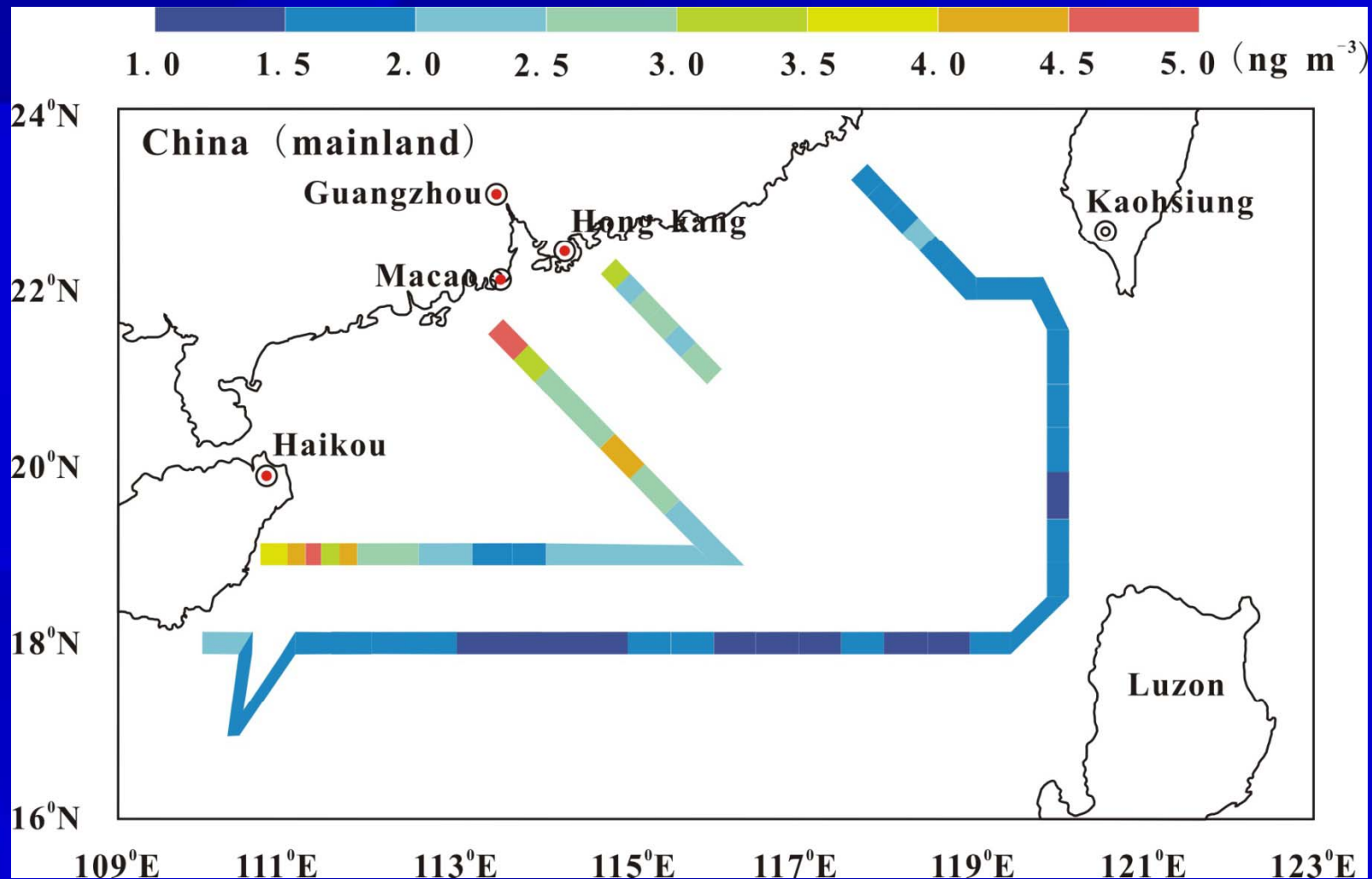
Atmospheric Hg in Guiyang and urban sites in NH



Atmospheric Speciated Hg in rural sites in China and NH



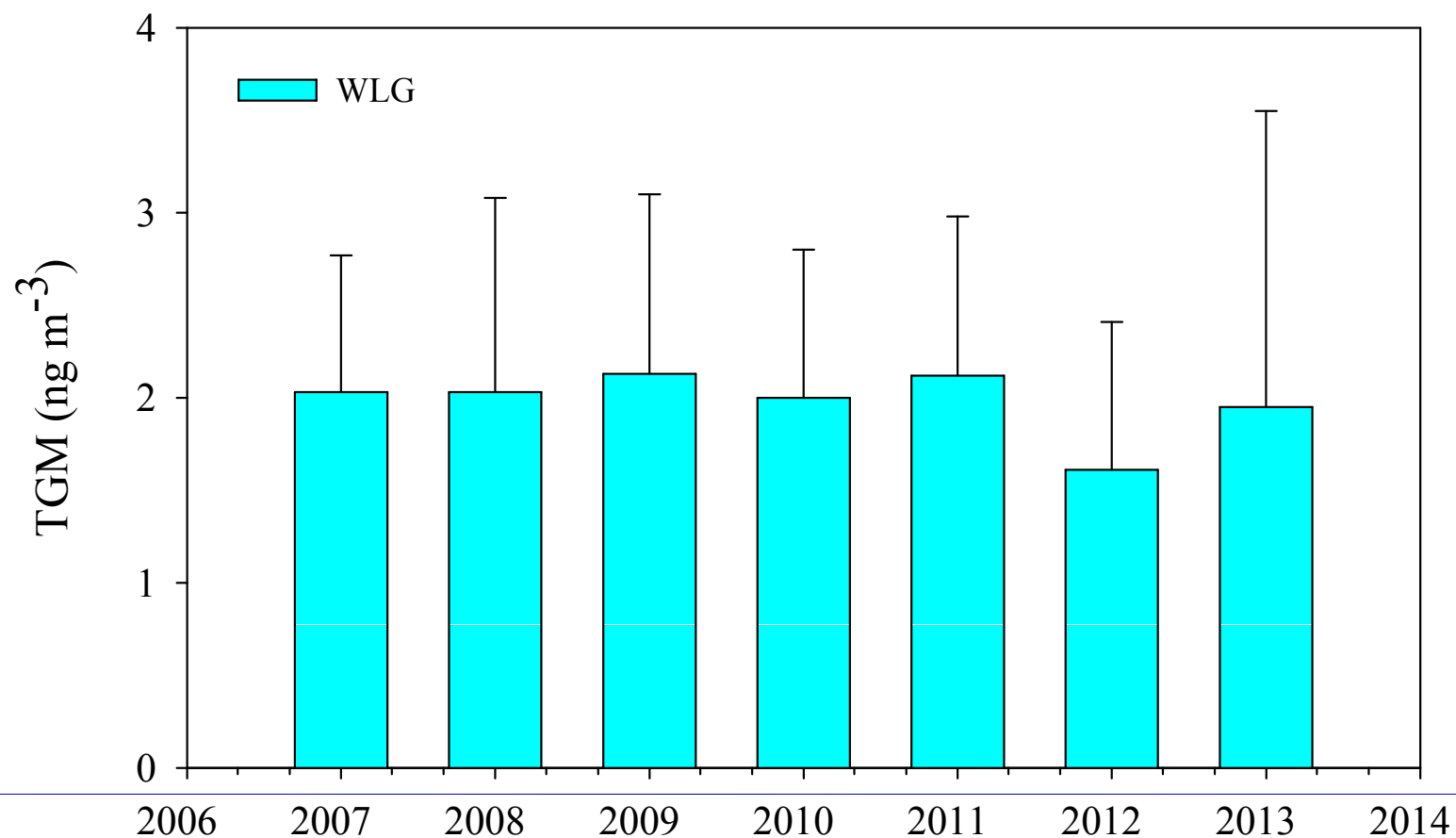
Spatial pattern of MBL TGM in northern SCS



Fu et al., 2010

Long-term trend of atmospheric TGM in China

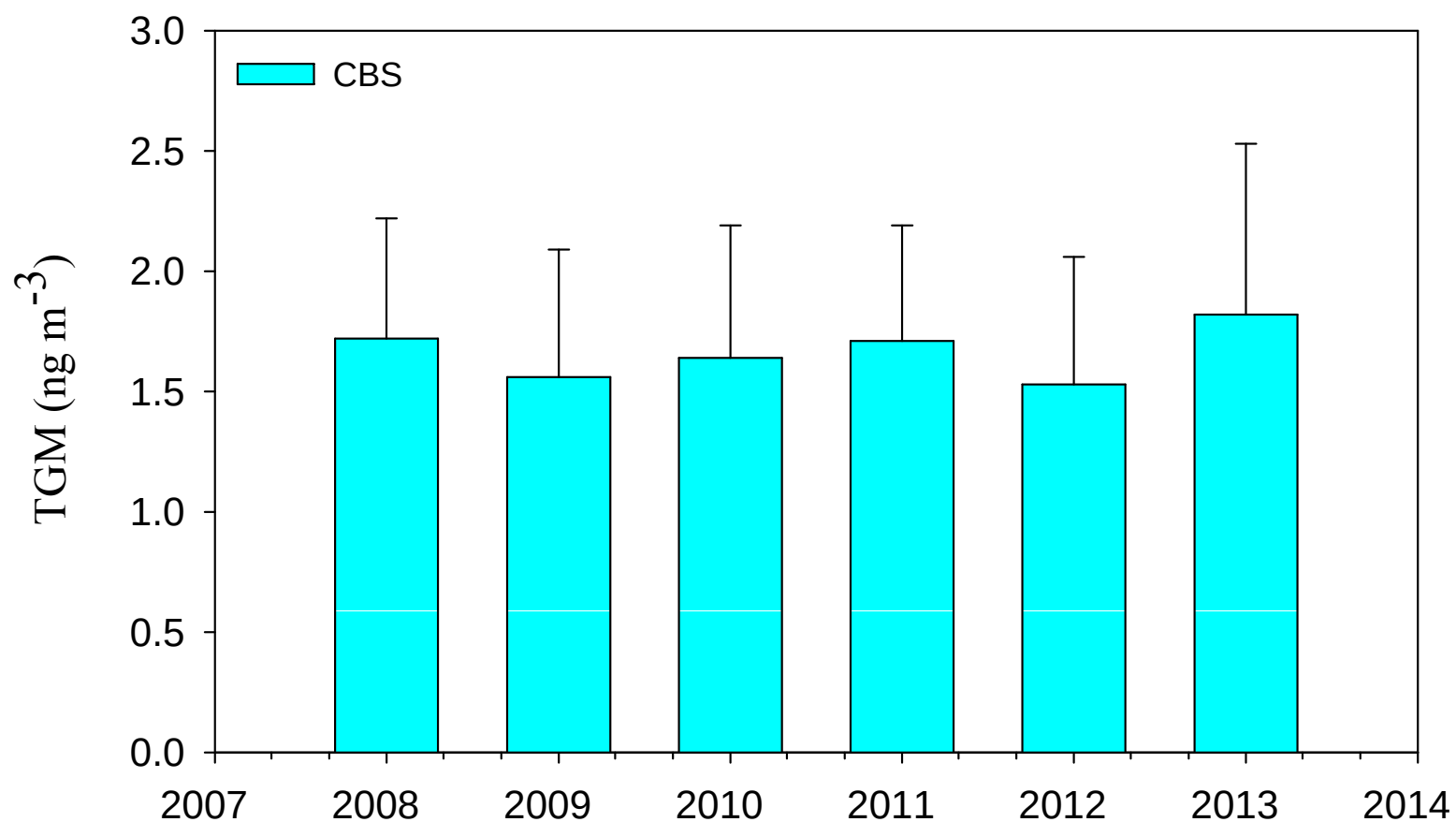
Temporal trend of TGM at Mt. WLG



Fu et al., Unpublished data

Long-term trend of atmospheric TGM in China

Temporal trend of TGM at Mt. Changbai



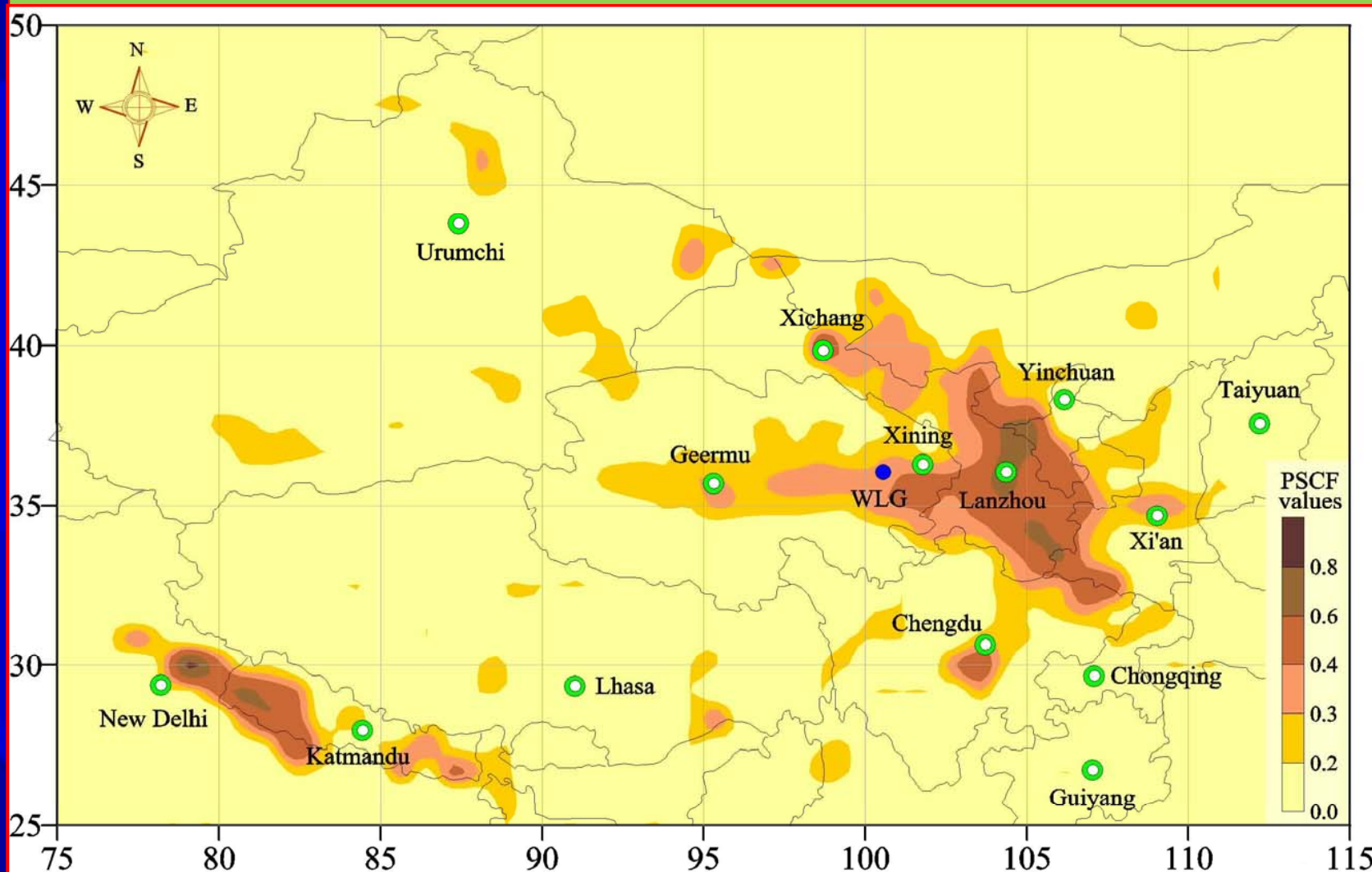
Fu et al., unpublished data

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Long-range transport of atmospheric Hg in China

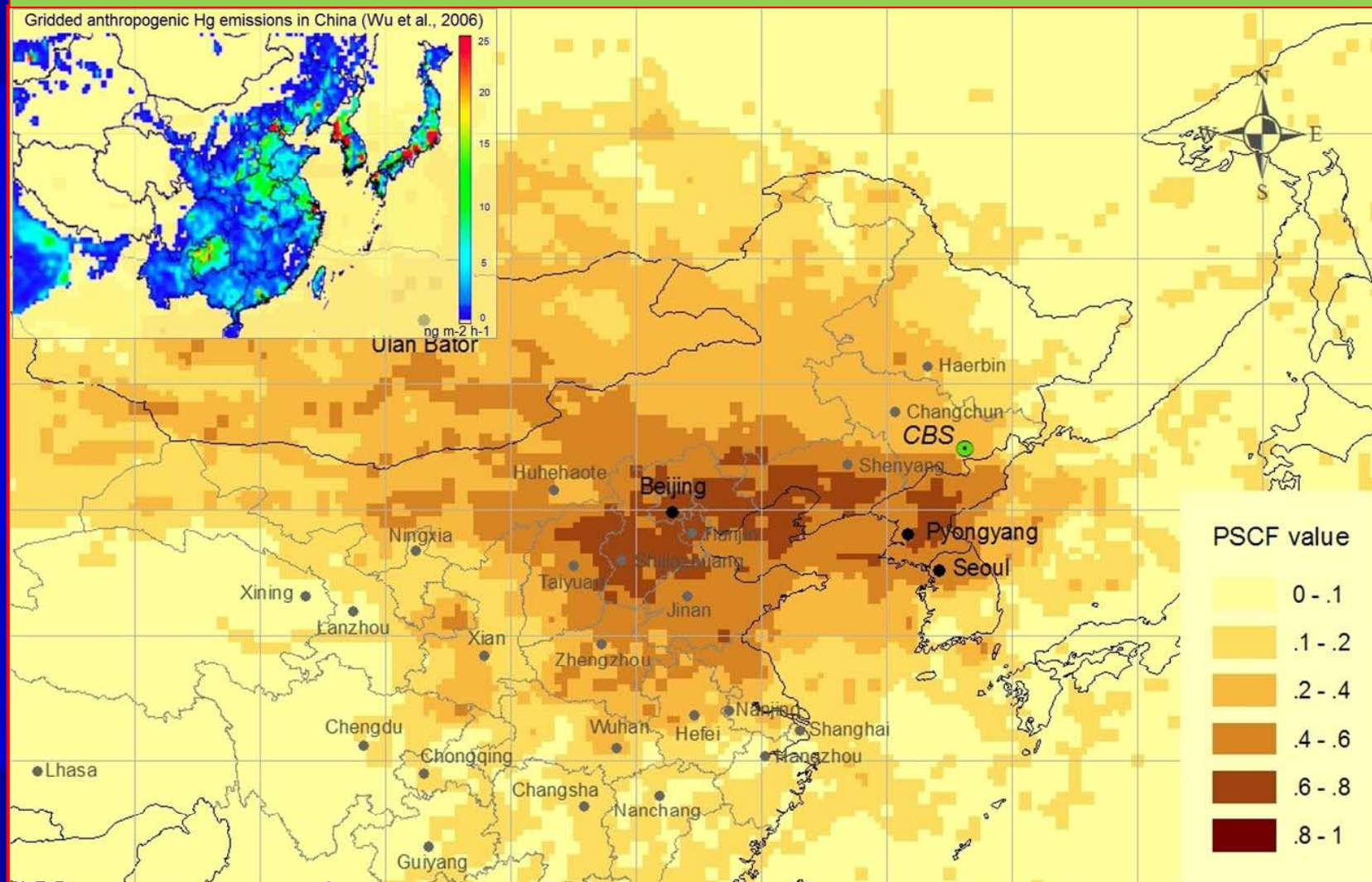
Potential sources of TGM at Mt. WLG



Fu et al., 2012

Long-range transport of atmospheric Hg in China

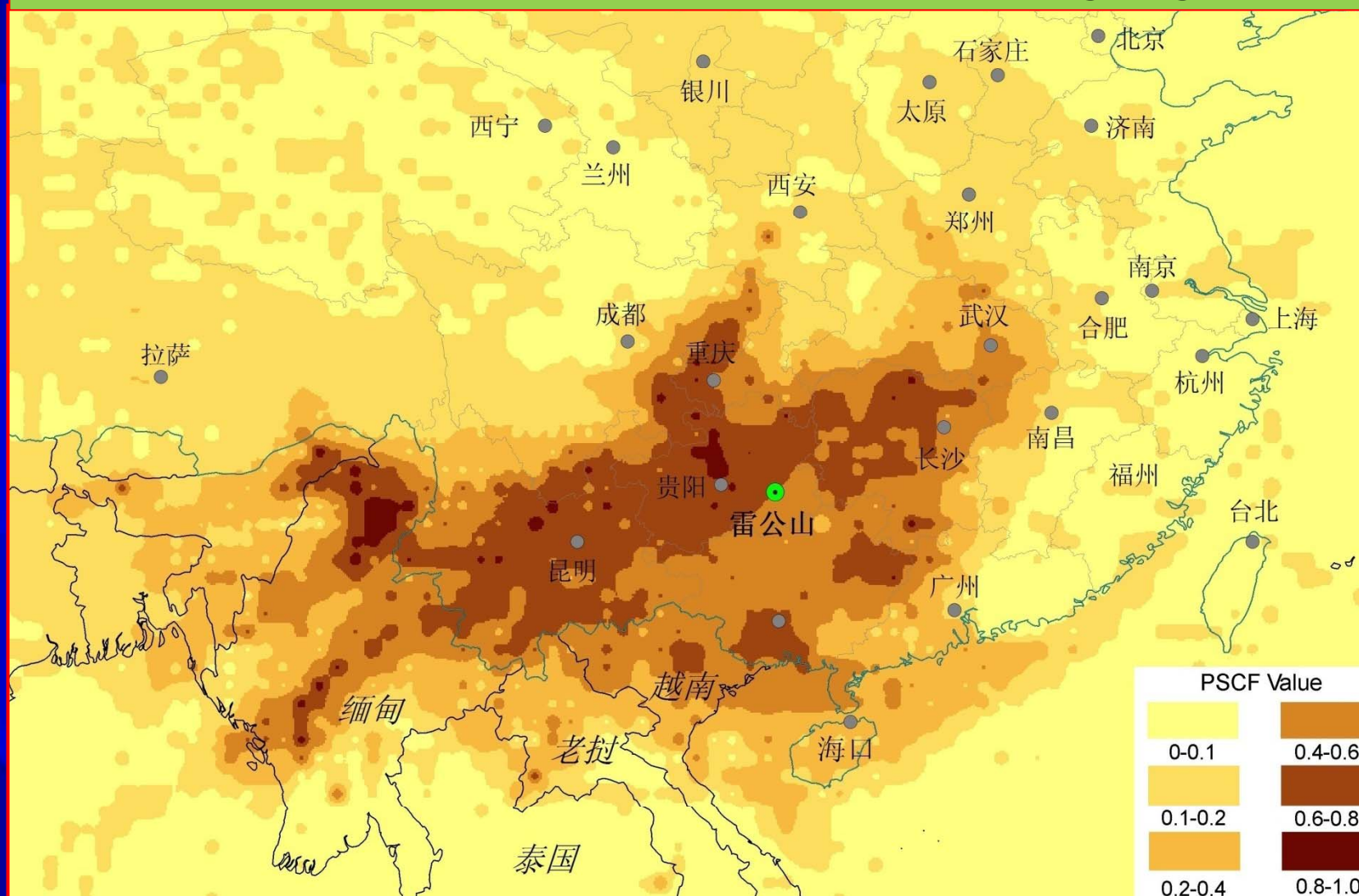
Potential sources of TGM at Mt. Changbai



Fu et al., 2012

Long-range transport of atmospheric Hg in China

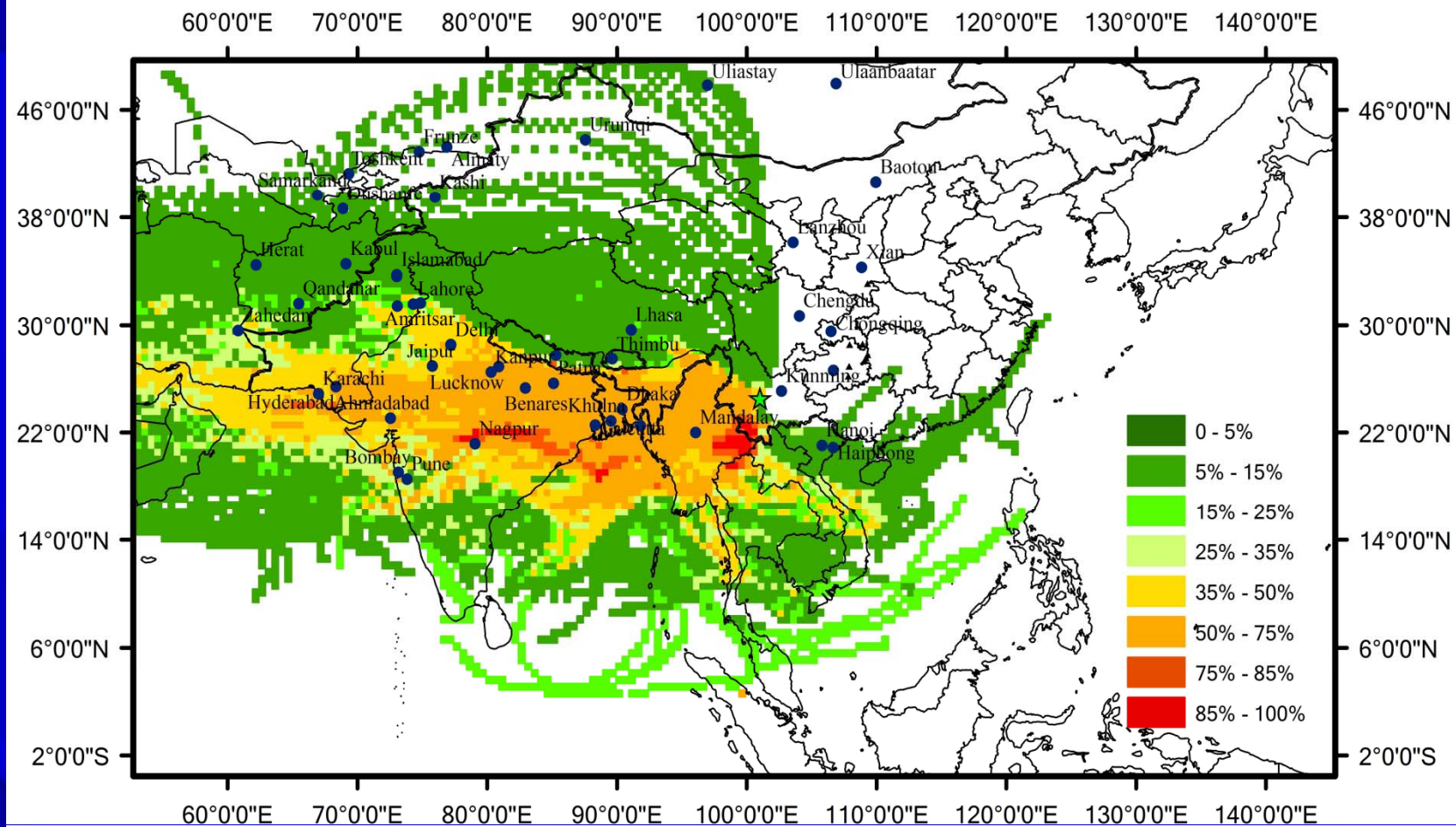
Potential sources of TGM at Mt. Leigong



Fu et al., 2010

Long-range transport of atmospheric Hg in China

Potential sources of TGM at Mt. Ailao

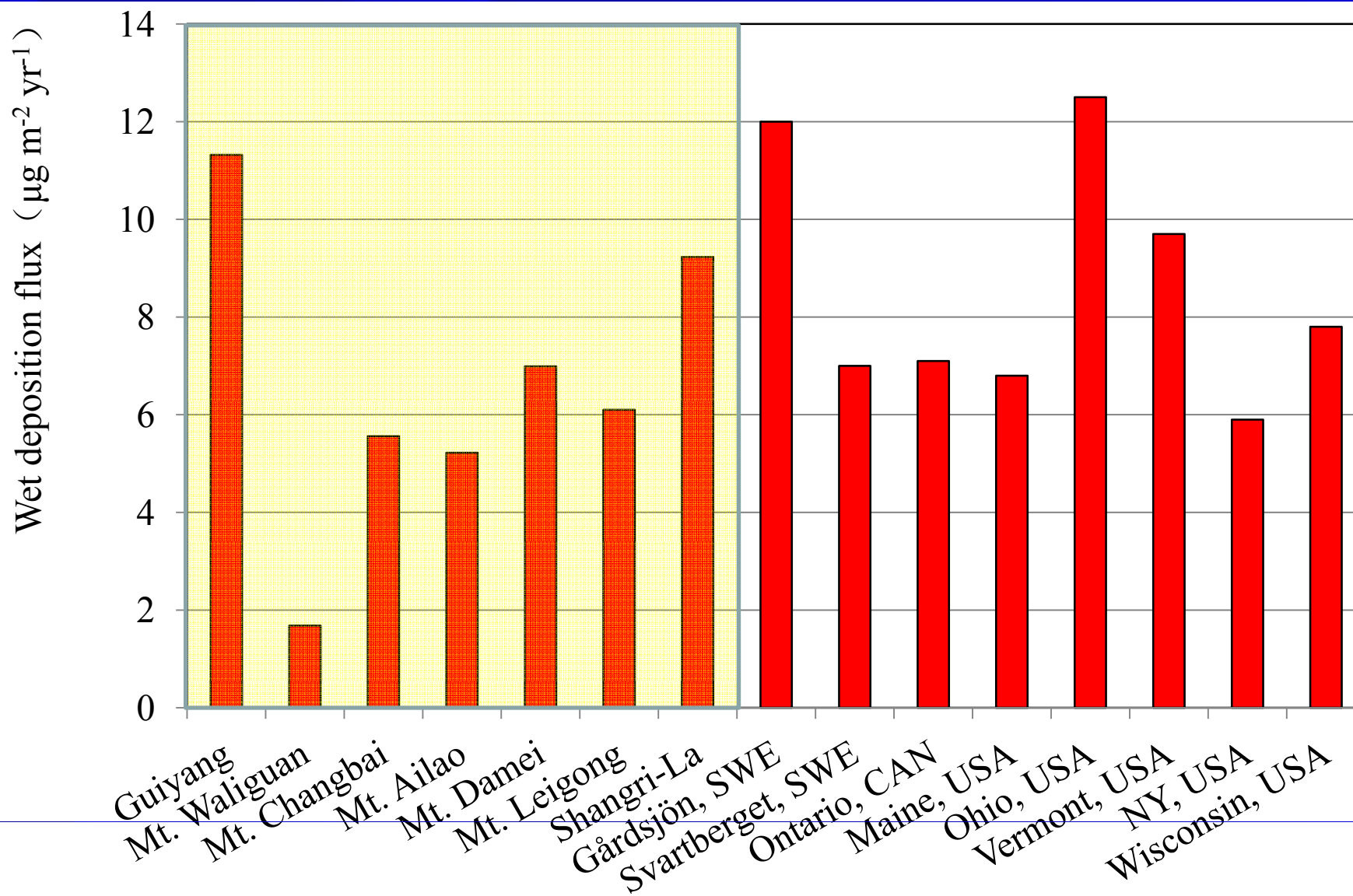


Zhang H, Fu X W, et al., 2012

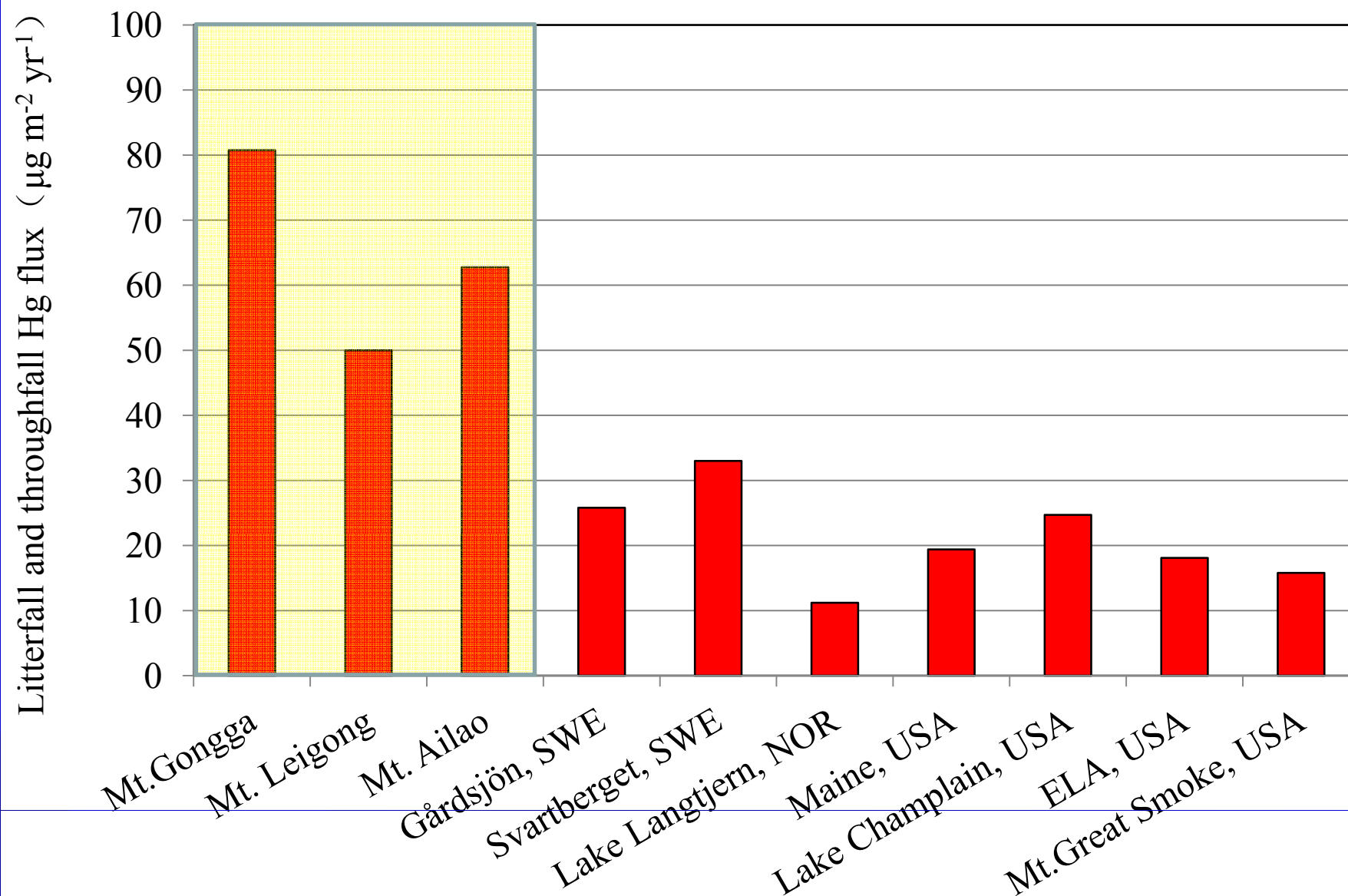
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Wet deposition flux of Hg in China



Dry deposition flux of Hg in forest of China



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