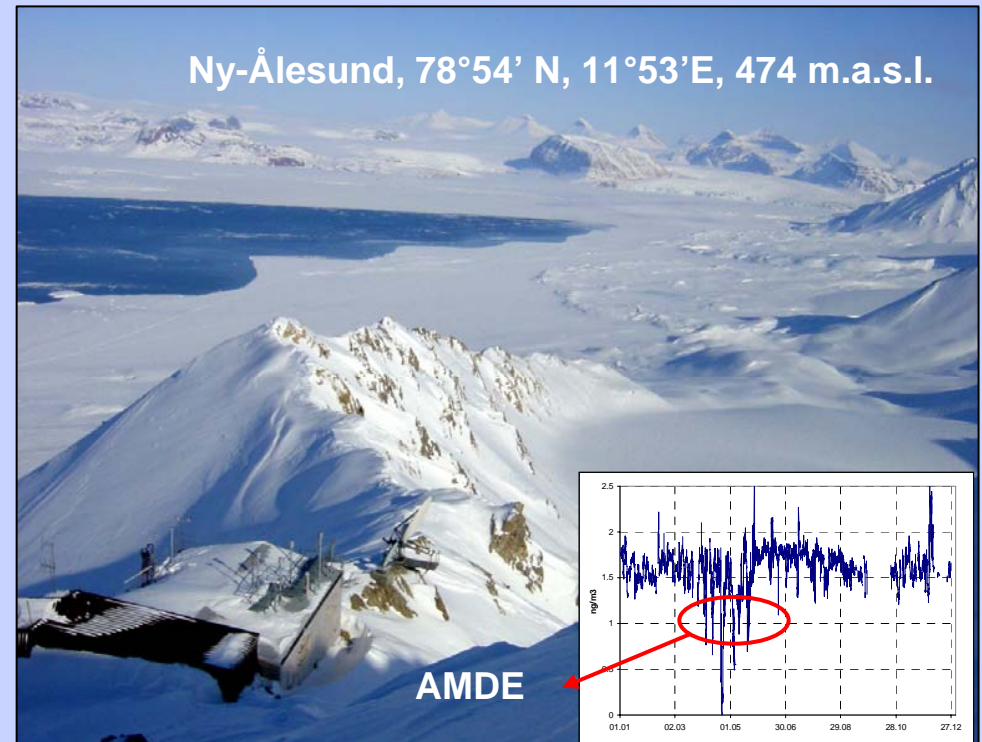


Atmospheric Mercury Depletion Events (AMDEs) in Polar Regions During Arctic Spring

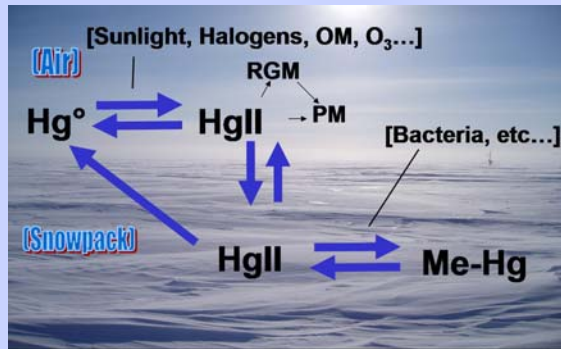
Katrine Aspmo
Torunn Berg
Norwegian Institute for Air Research

Grethe Wibetoe
University of Oslo, Dept. of Chemistry

June 16, 2004



This talk compares theory with measurements and gives the environmental implications



Theory for Hg cycling in Arctic springtime



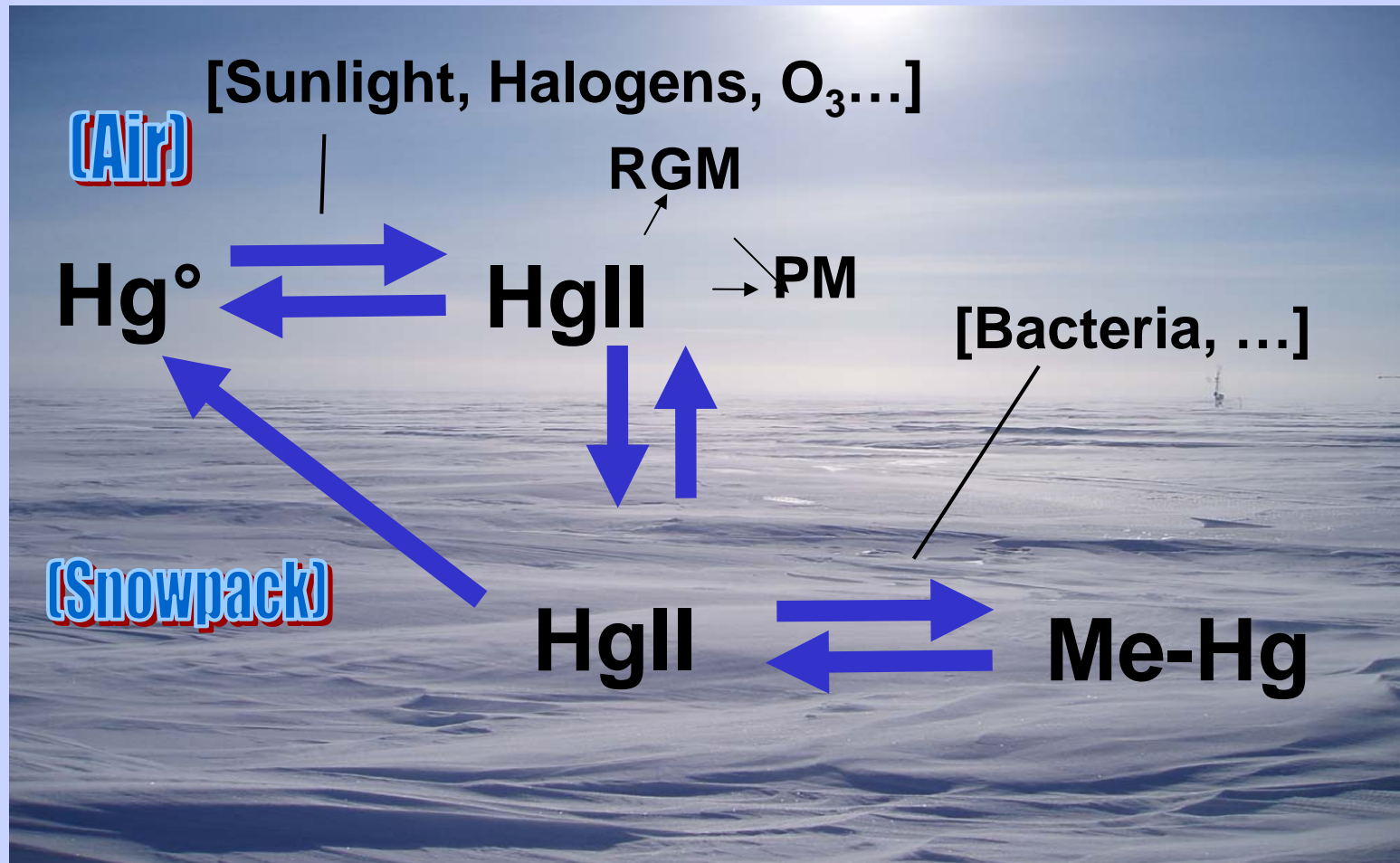
Measurements from Zeppelin Air Monitoring Station



Environmental implications of AMDEs



A theory exists for the cycling of mercury during depletion events in the Arctic springtime



[Lindberg et al., 2002; Steffen et al., 2003]



Springtime measurements from Zeppelin mountain agree well with this theory



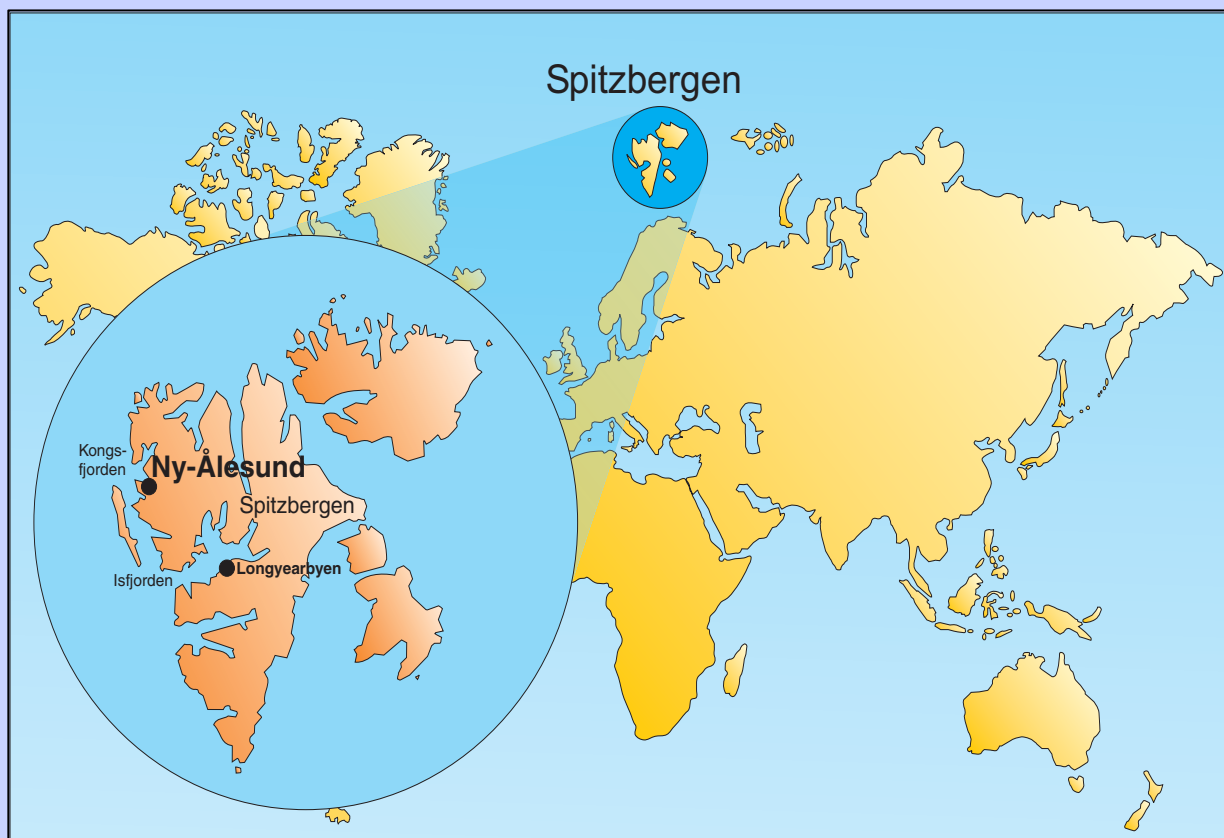
Particulate Mercury (PM)



Reactive Gaseous Mercury (RGM)



Springtime measurements from Zeppelin mountain agree well with this theory



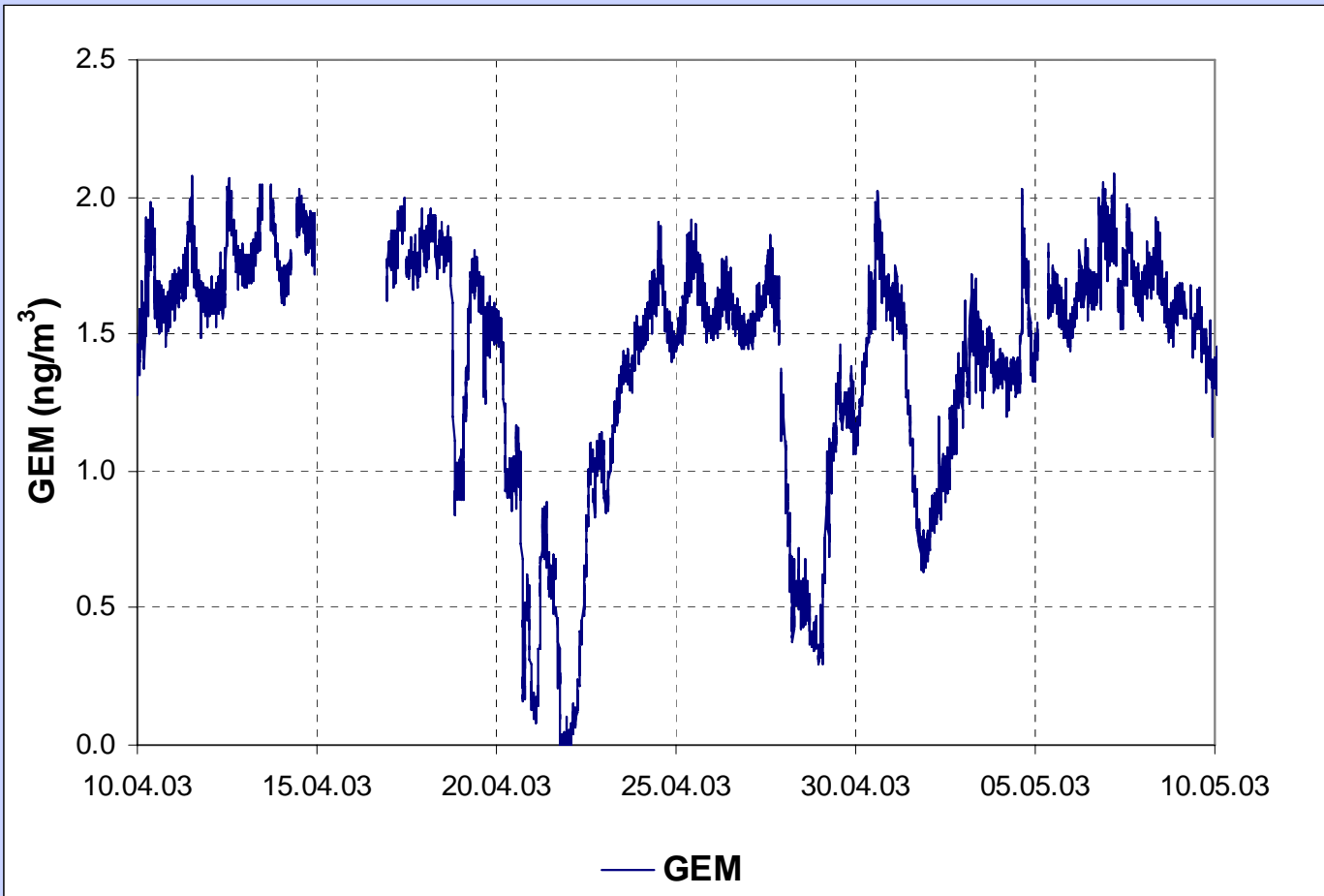
Particulate Mercury (PM)



Reactive Gaseous Mercury (RGM)

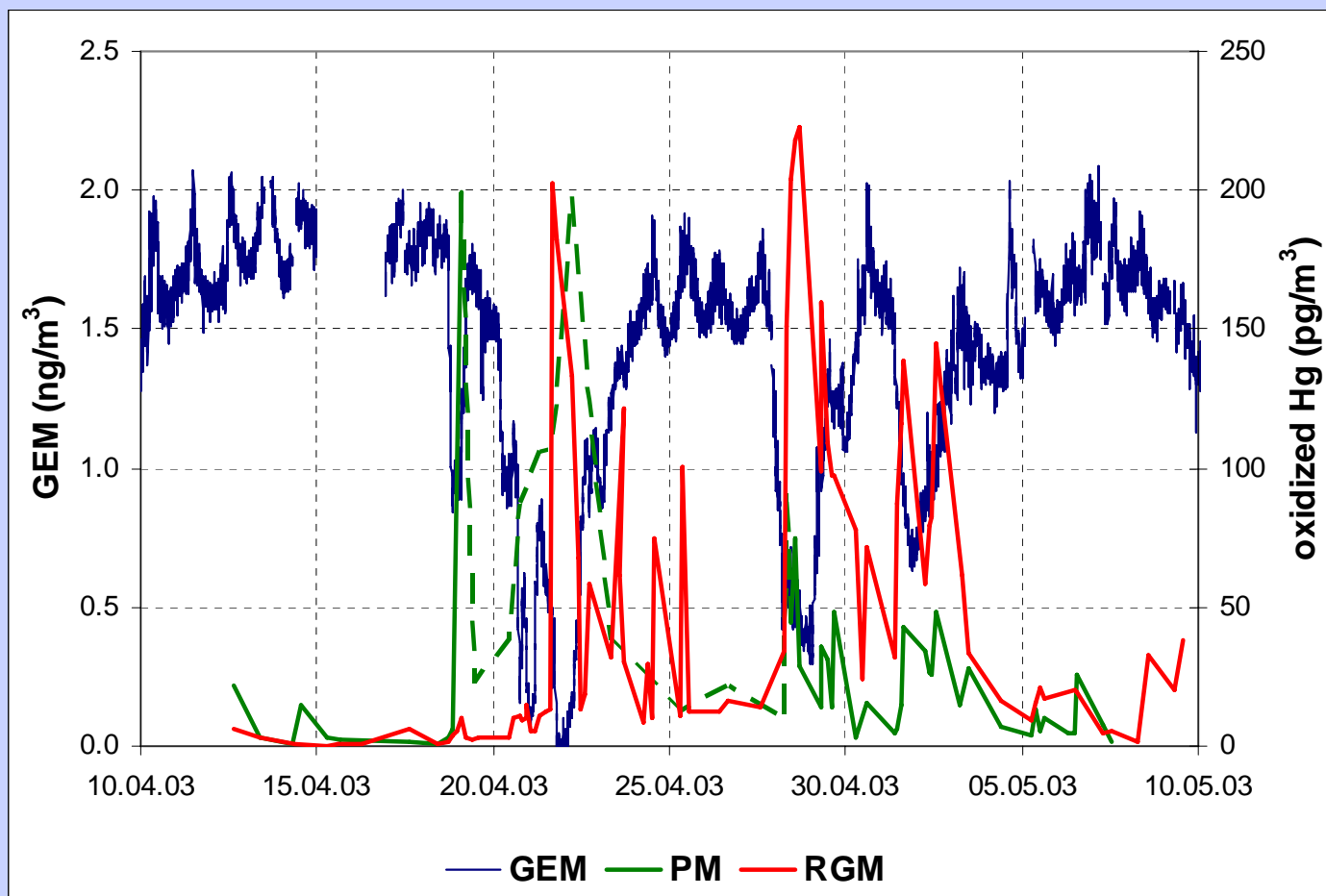


Springtime measurements from Zeppelin mountain agree well with this theory



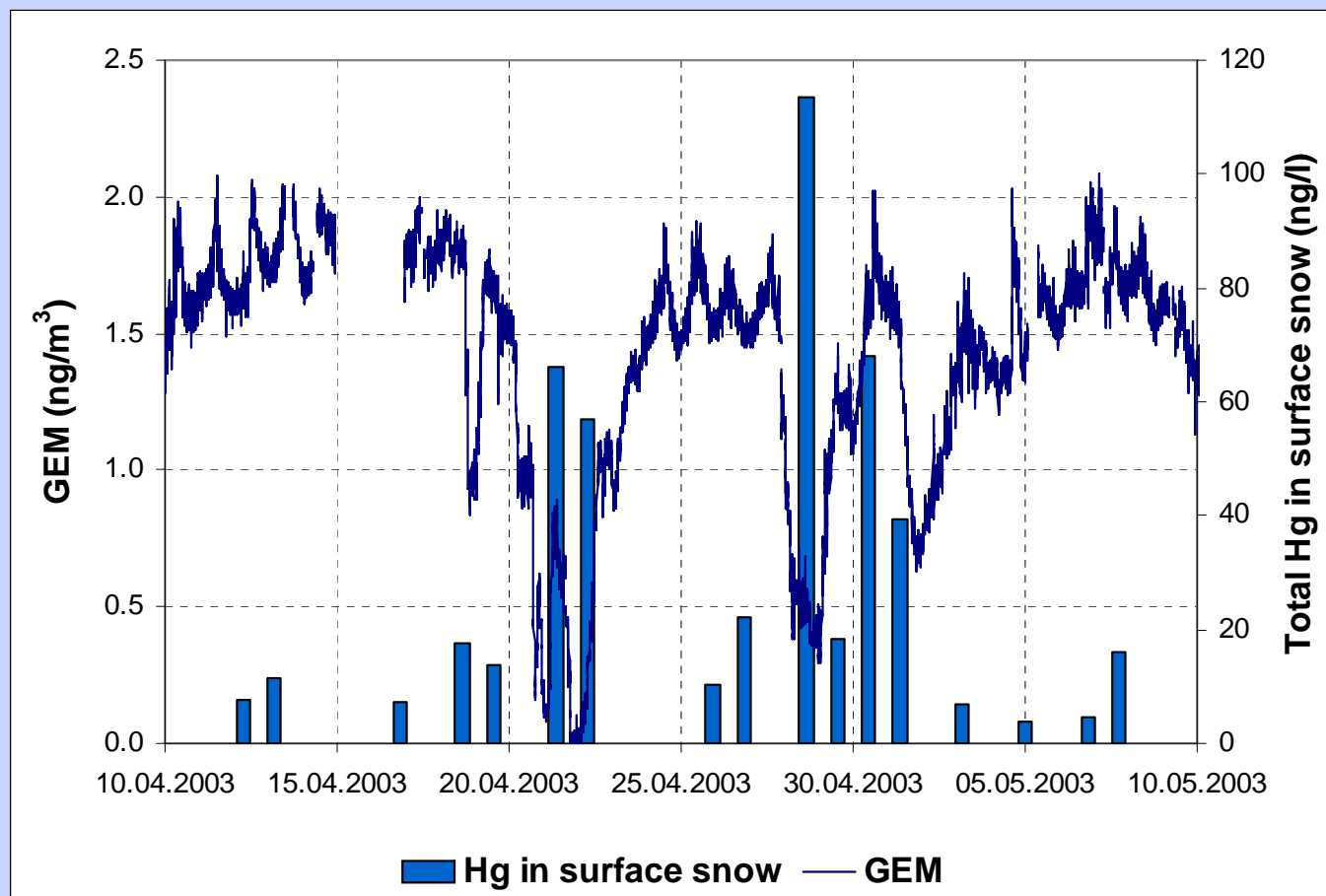
GEM: Gaseous Elemental Mercury

Springtime measurements from Zeppelin mountain agree well with this theory



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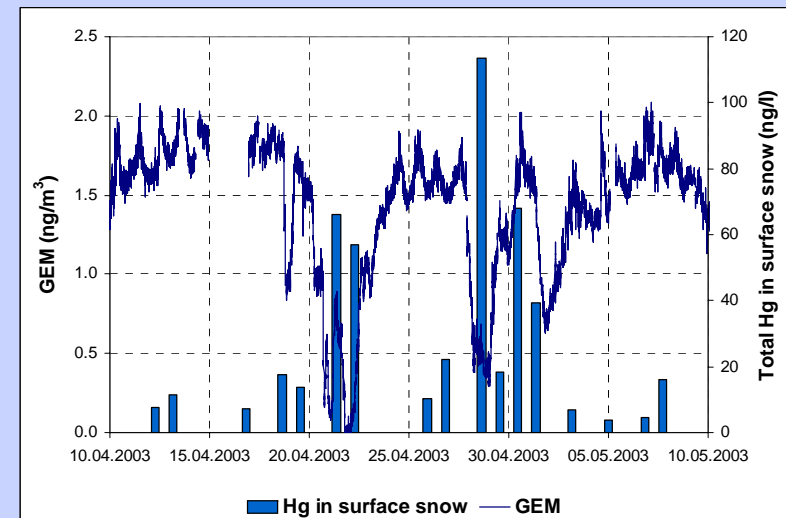
GEM: Gaseous Elemental Mercury

In summary, AMDEs lead to increased Hg input to Arctic ecosystems

A significant fraction of the deposited Hg is bio-available

Deposited Hg can be re-emitted

AMDEs can increase as polar climate warms



Questions?

