

Two-year monitoring of atmospheric aerosols at the  
summit of Mt. Fuji (3776 m)

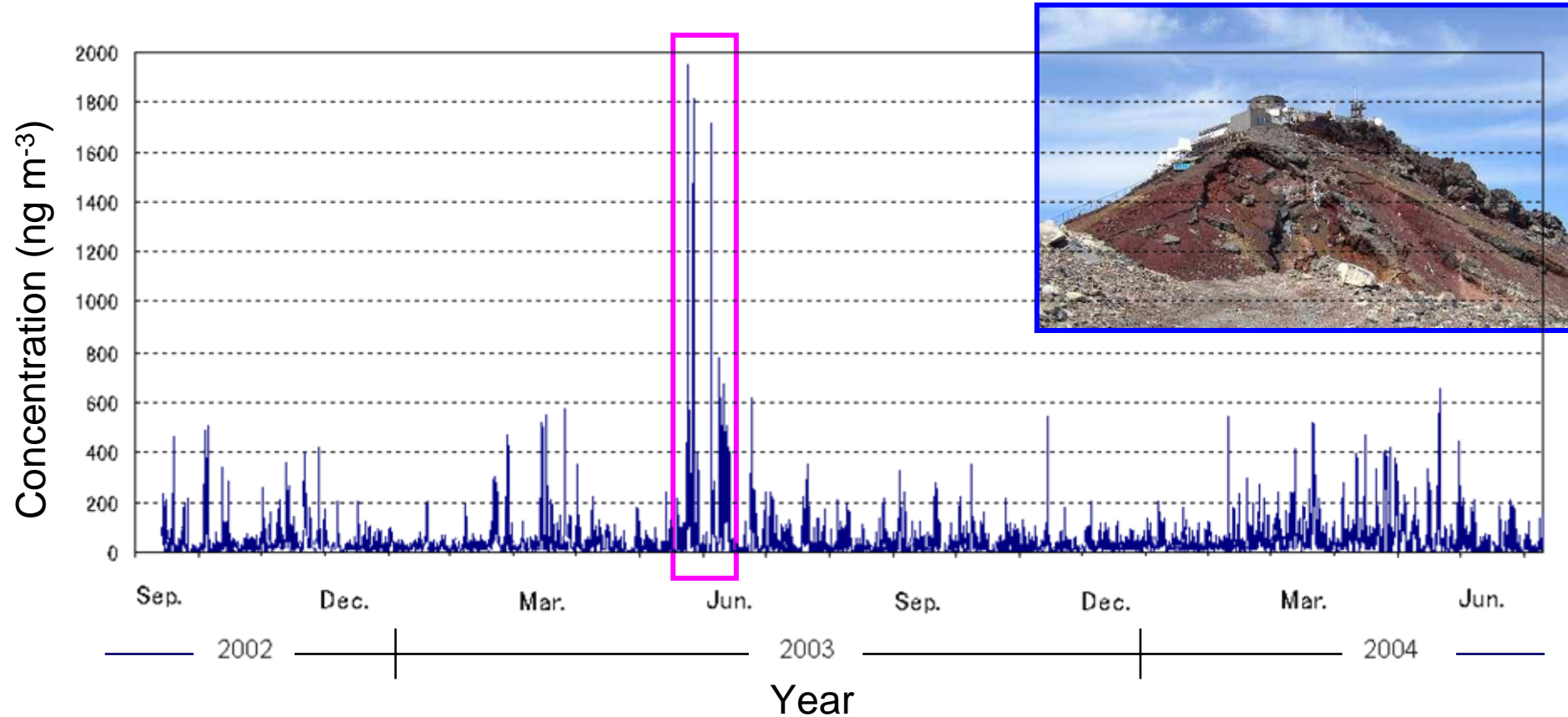
Mt. Fuji Int'l Symposium  
(March 2006, Tokyo)

Naoki KANEYASU (AIST, Japan)

From Sep. 2002 through Aug. 2004,  
several monitorings for atmospheric chemistry  
were conducted at Mt. Fuji Observatory



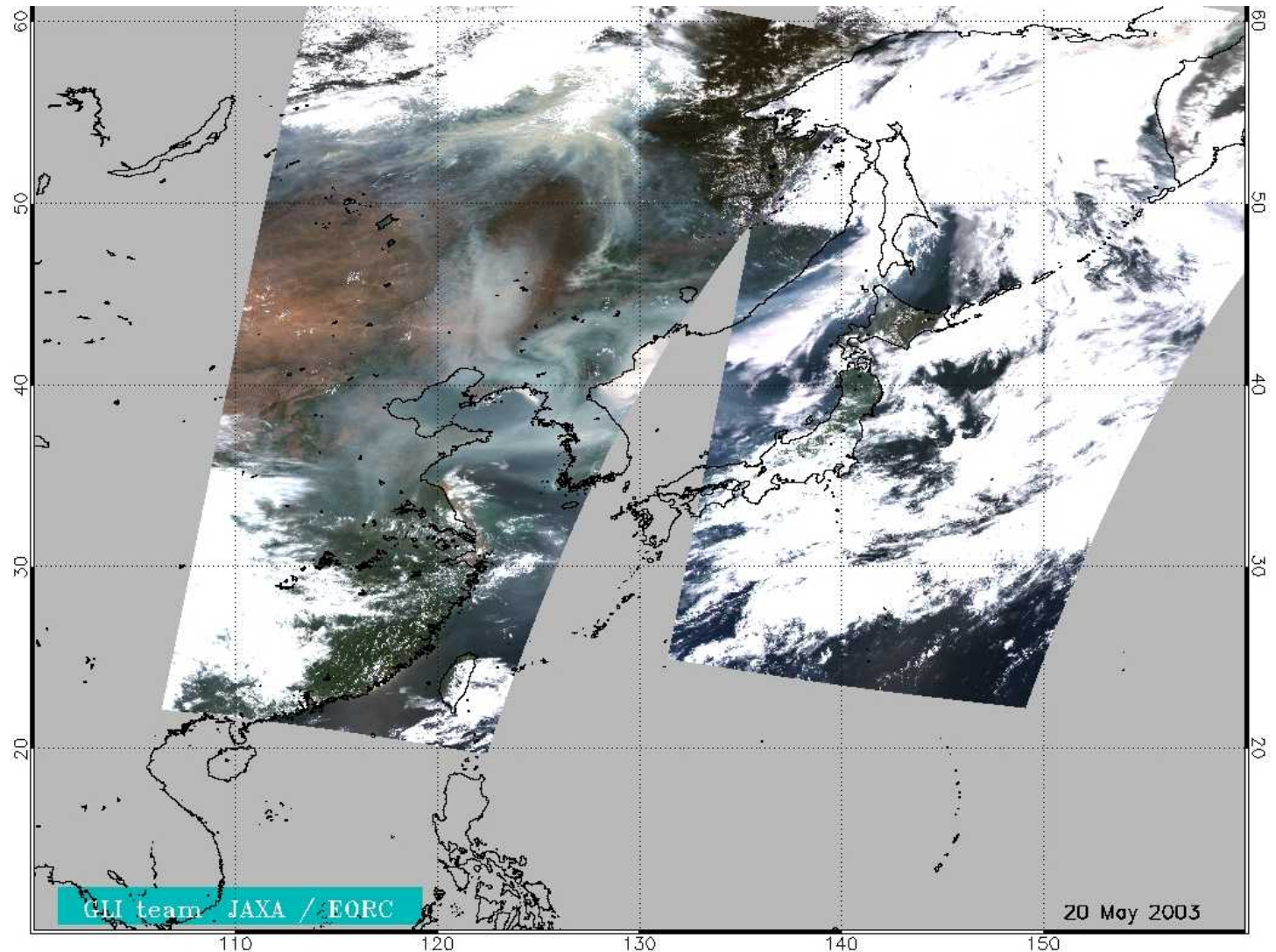
# Two year of black carbon conc. time series at Mt. Fuji Observatory (meas. with an Aethalometer)



- Extremely high concentrations of BC were observed from late May through the middle of June, 2003.

# ADEOS II satellite GLI sensor RGB composite image

( May 20, 2003 )



# Smoke layer lying below the summit of Mt. Fuji on May 22, 2003



Photo : Mr. Noboru Nishizawa of Mt. Fuji Meteorological Observatory

– A case study for the Siberian forest fires –



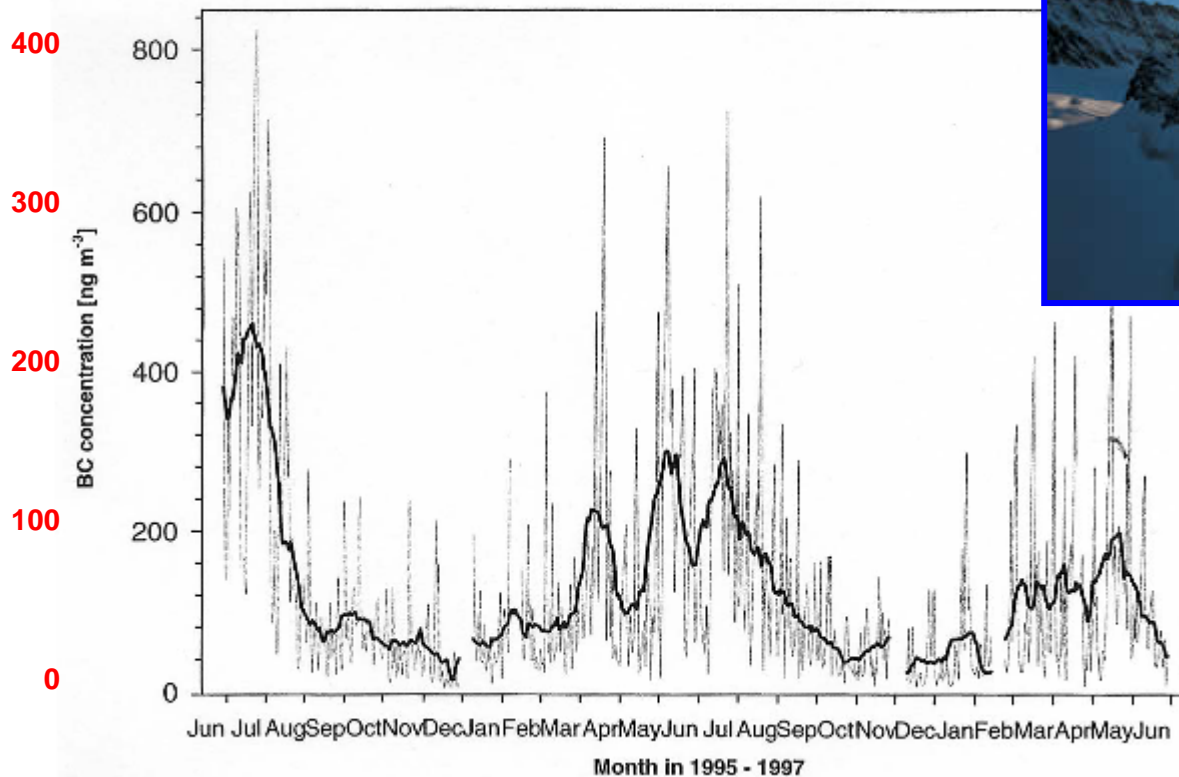
- Property of long-range transported Siberian forest fire smoke observed at 3776 m asl. over Japan
  - ➡ High conc. of **BC** and **organic species**
  - ➡ High conc. of **retene** and the predominance of **n-alkanes with odd carbon number**
  - ➡ Stable size distribution implying the **aged smoke**
  - ➡ **Strong wavelength dependence** of absorption coefficient

# Three years of BC conc. time series at Mt. Jungfrauoch by Lavanchy *et al.* (1999)



Aethalometer  
Manufacturer  $\alpha_{ap}$

*V.M.H. Lavanchy et al. / Atmospheric Environment 33 (1999) 2759–2769*

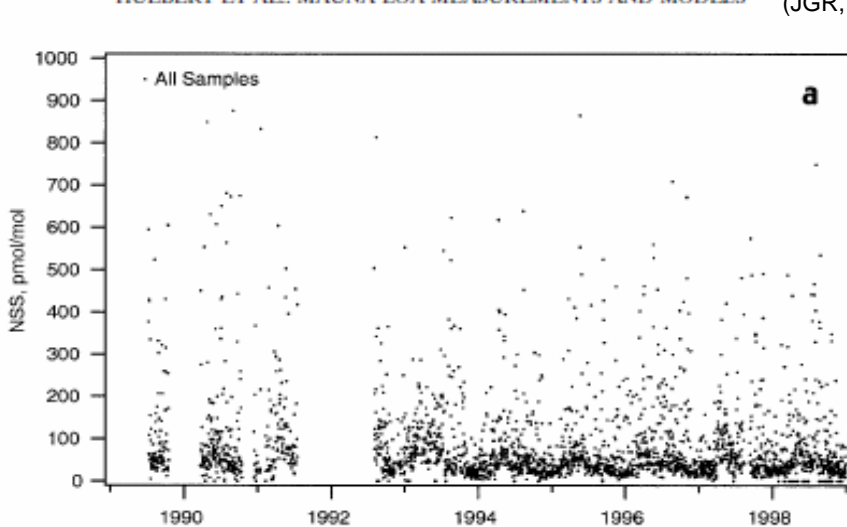


- Daily averaged values : Highly variable
- Monthly moving averaged values: Spring-summer maxima

# Nine years of nss-sulfate conc. time series at Mauna Loa Observatory by Huebert *et al.*(2001)



HUEBERT ET AL.: MAUNA LOA MEASUREMENTS AND MODELS (JGR, 2001)



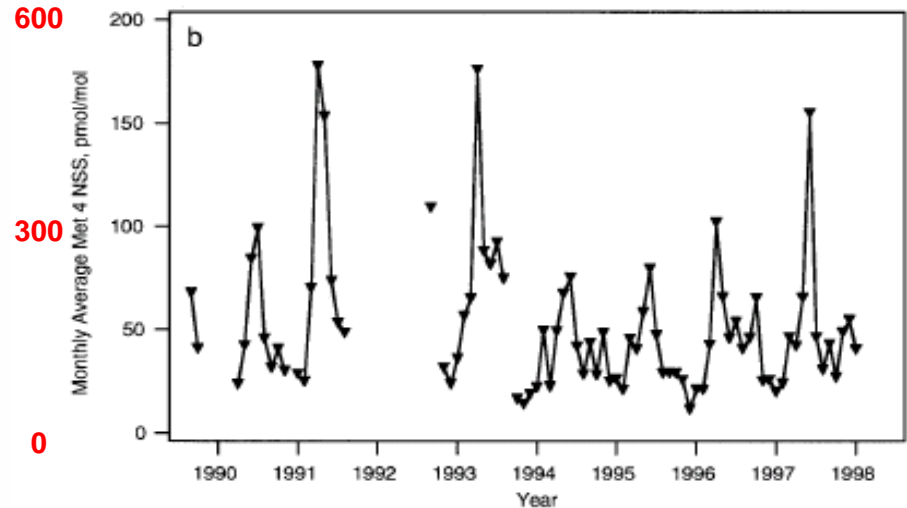
(a) 12h-sample raw data  
→ Highly variable

( $\text{ng m}^{-3}$ )

600

300

0



(b) Monthly averaged selected data  
→ Spring maxima  
... Asian influence



# Summary



- Although the instrumentation at Mt. Fuji Observatory was not enough for the complete data accumulation for atmospheric chemistry studies, several interesting knowledge on the transport of aerosol species in the FT had been collected during 2002 – 2004 atmospheric chemistry monitoring campaign.
- Careful data selection and re-calibrations are needed to compare the data at Mt. Fuji with other high-alpine sites, such as at Mauna Loa Observatory and Jungfraujoeh.