What is BUNIAACIC?

Introduction to the Kickoff Meeting,
LBA office, INPA, Manaus, Brazil 15th Feb 2012

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NATURAL ENVIRONMENT RESEARCH COUNCIL

FAPESP

BUNIAACIC

Brazil-UK Network for Investigation of Amazonian Atmospheric Composition and Impacts on Climate

MANCHESTER 1824

The University of Manchester

USP Universidade de São Paulo Brasil

BUNIAACIC
kickoff meeting

Summary: The BUNIAACIC collaboration aims to develop a coherent strategy for UK studies of atmospheric composition and impacts in the Amazon

Immediate short-timescale material objectives by which the collaboration will be able to contribute include:

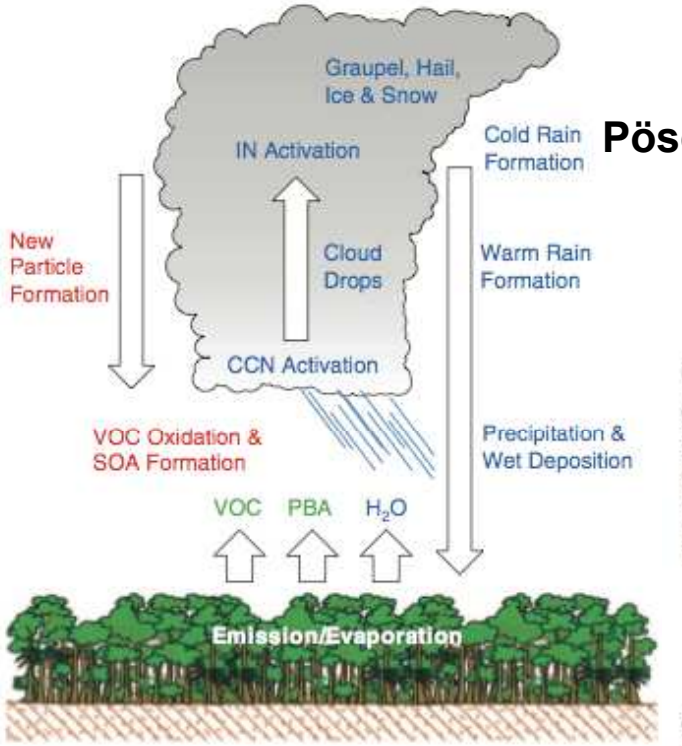
i) skill development and knowledge exchange through training in instrument operation and data analysis for University of São Paulo AMS operators, hence

iii) evaluation of the performance of the long-term monitoring instrument through comparison with intensive measurement by additional instrumentation

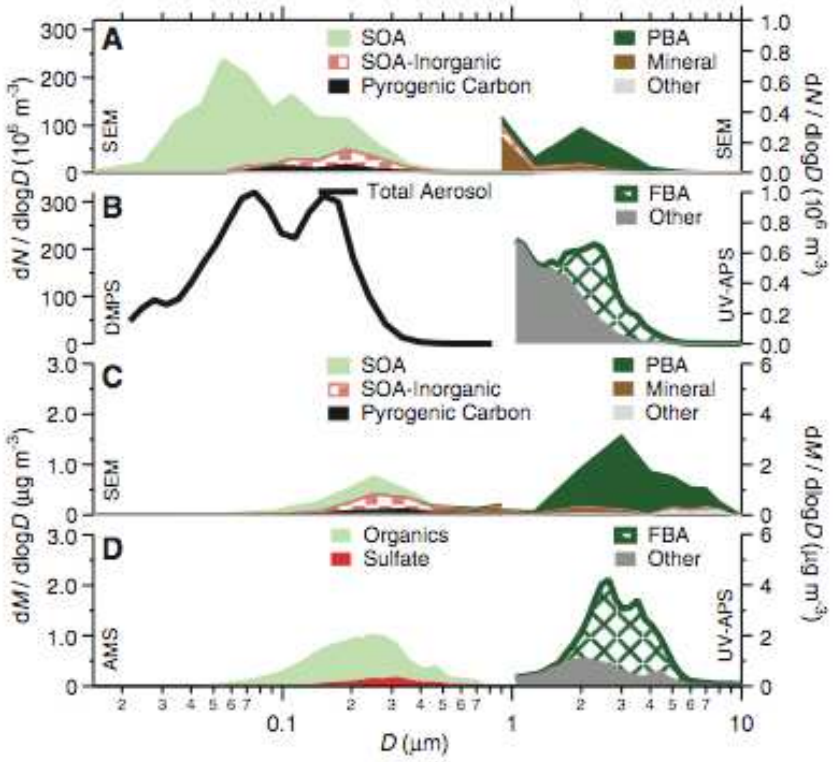
iv) intensive measurements of additional aerosol properties for direct linkage between aerosol composition and optical / microphysical properties

v) quantification of the impact of measured BSOA and BPOA on climatically important behaviour related to their potential to impact on direct and indirect radiative forcing

Natural biogenic particles substantially influence pollution, weather & climate

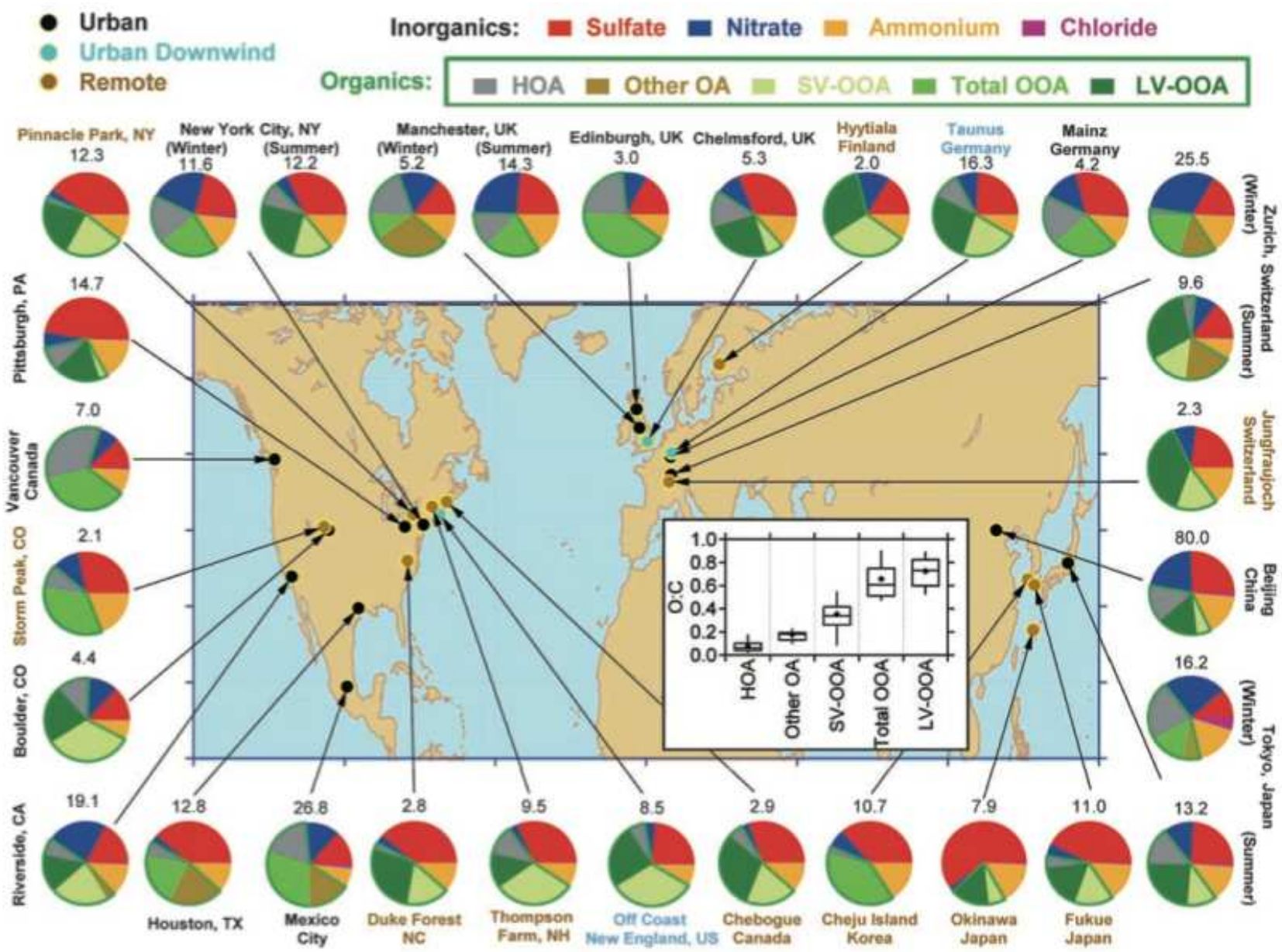


Pöschl et al., 2010, Science



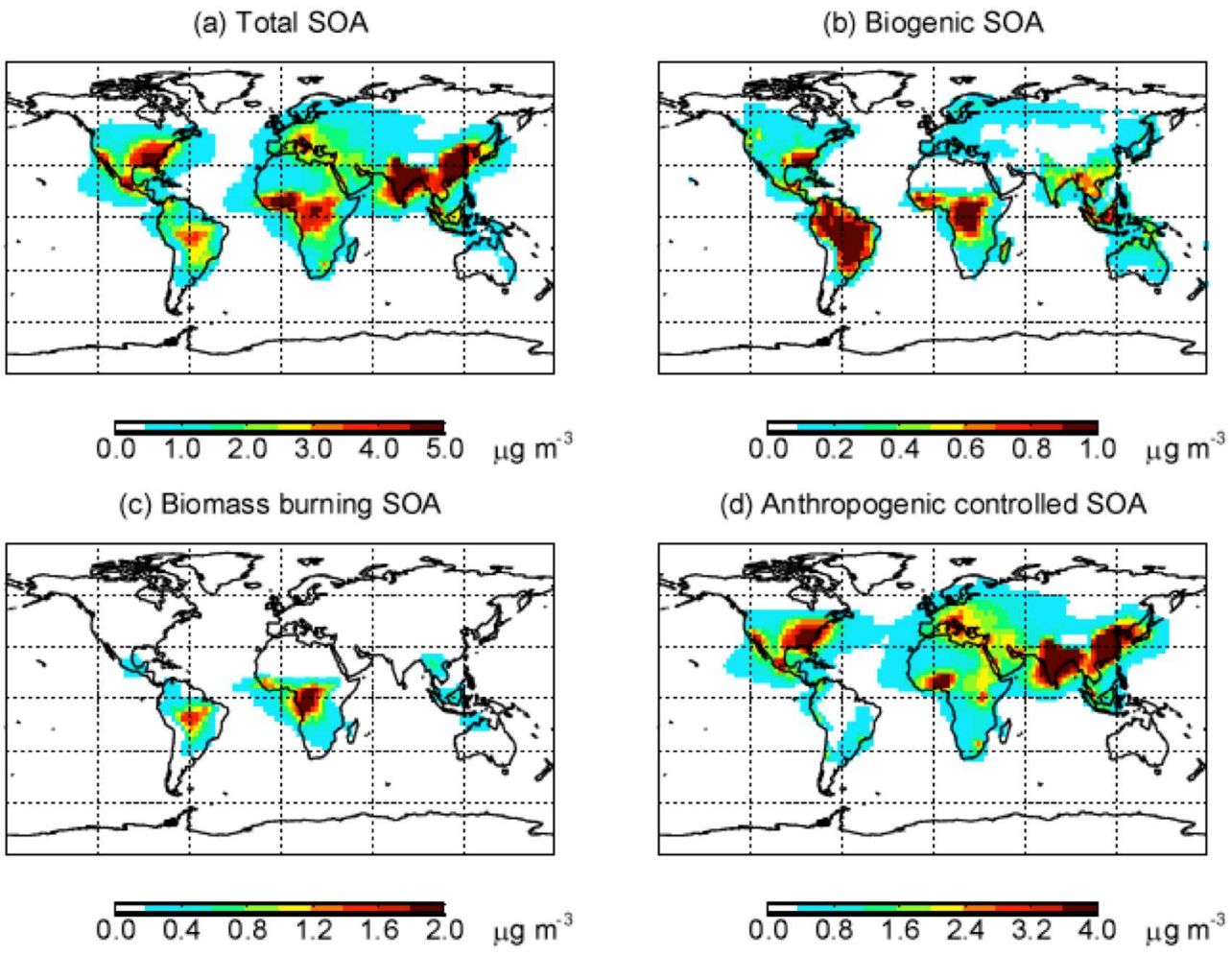
Most fine particles globally contain lots of organic material

Jimenez et al., 2009, Science



Biogenic "SOA" is massively enhanced by anthropogenic emissions

Spracklen et al., ACP, 2011



Summary: The BUNIAACIC collaboration aims to develop a coherent strategy for UK studies of atmospheric composition and impacts in the Amazon

Strategic planning and infrastructure development objectives that the BUNIAACIC programme will address include:

vi) construction of a White Paper outlining the recommended strategic methodology for UK participation in Amazonian atmospheric research

vii) appropriate planning for follow-up activities to address the research strategy on appropriate timescales, likely to include preparation of a consortium proposal.

Ongoing / Future Initiatives with which BUNIAACIC needs to explore linkages

Brazilian: LBA (specifically AEROCLIMA, but more broadly any activities of collaborative interest, including CLAIRE)

UK: CLAIRE-UK, SAMBBA

Other International: Go-Amazon 2014

Previous UK experience / expertise and initiatives upon which BUNIAACIC can draw

In tropical areas, notably the

AMMA / DABEX experiments in West Africa, 2005-2006 and
OP3 / ACES experiments in Sabah, Malaysian Borneo, 2008

Elsewhere, many person-decades of atmospheric composition related field research in all continents, from the Antarctic to Arctic, a little of which we may hear about over the next couple of days

Science areas of interest to UK researchers

Land – atmosphere interactions

Short and longer-lived atmospheric trace gas chemistry

Oxidative capacity and trace gas burden / budget

Anthropogenic perturbations to the pristine biogenic background

Gas-aerosol interactions and aerosol formation and transformation

Aerosol physical and chemical properties

Aerosol optical properties and direct / semi-direct radiative effects

Aerosol – cloud interactions

Air quality – meteorology interactions

BUNIAACIC Activities

WP1: Long-term collaboration scoping – what we're doing now!

WP2: Long-term capacity enhancement – ACSM deployment at Manaus (and Porto Velho, now that SAMBBA is funded)

WP3: Short-term pilot deployment – something we also need to explore now

WP4: Strategy Development and Network Coordination – what we do after this meeting…