

# Parallel Session 1

PS 1/05

## THE LEGACY OF LBA FOR AMAZONIA: CONTRIBUTING FOR CONSERVATION AND SUSTAINABLE DEVELOPMENT

E.J. Luizao<sup>1</sup>, C.A. Nobre<sup>2</sup>, M. Batistella<sup>3</sup>, L.A. Martinelli<sup>4</sup>, M. Bustamante<sup>5</sup>

<sup>1</sup>INPA, Manaus, Amazonas, Brazil; <sup>2</sup>INPE, Sao Jose Campos, SP, Brazil; <sup>3</sup>EMBRAPA, Jaguariuna, SP, Brazil; <sup>4</sup>CENA/USP, Piracicaba, SP, Brazil; <sup>5</sup>UnB, Brasilia, DF, Brazil

From 1998 on, the LBA Project (The Large-scale Biosphere-Atmosphere Experiment in Amazonia) has contributed heavily to improve (i) the Amazonian institutions capability for research, (ii) the training of many young scientists, and, (iii) the sound understanding of Amazon ecosystems functioning and actual importance. New or improved knowledge includes: (1) the recognition that old mature forests are growing (and, thus, sequestering atmospheric CO<sub>2</sub>) at different rates within the Amazon Basin, and according to the topography at local scales; (2) the vital role of the volatile organic compounds (VOCs) emitted by plants in the production of clouds and raindrops; (3) the role of the Amazon region on the climate and pluvial regimes of Southern Brazil and other regions in the continent; (4) the lasting and recurrent effects of selective logging and forest fragmentation on residual forests, which become increasingly susceptible to forest fires; (5) the new developments of remote-sensing techniques allowing accurate detection of deforestation or even small under-canopy forest damages, as well as floristic and functional changes in the forest; (6) the close coupling of land and water bodies regarding the carbon and water cycles, at different sizes of hydrographic basins; (7) a better understanding of the dynamics of secondary forests, with alternative pathways depending on the former land use; (8) the evaluation of alternatives for reutilization or rehabilitation of abandoned or degraded lands through no-burning agriculture and Agroforestry systems. Research progress allowed better assessment of forest environmental services, improved models, and the creation of new research and development programs.