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Evolution of the size-segregated inorganic and organic aerosol composition from the biomass burning period to the on-set of the wet season in Rondonia, Brazil.

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An aerosol characterisation experiment was conducted during the SMOCC field campaign at a pasture site in Rondonia, Brazil, in the period 10 Sept - 14 Nov 2001, correspondent to the transition from dry season to the on-set of the rainy period. High-time resolution measurements of PM, TC and semivolatile inorganic compounds, and time-integrated samplings with stacked filters and several impactors were performed throughout the whole campaign. The trend in the aerosol concentration clearly identifies a first (dry) period characterized by prolonged episodes of very high concentrations (100 - 200 μg m-3) in connection with strong emissions from biomass burning, a second (transition) period during which the biomass burning activities were still active but did not lead to aerosol concentrations higher than 50 μg m-3, and a third (wet) period showing steadily low concentrations (2 - 7 μg m-3) due to the enhanced wet scavenging and the substantial reduction of the burning activities The overall set of measurements (about 80 continuous samplings with both filters and impactors) provides a unique data-base on the size-segregated inorganic and organic aerosol composition in a tropical environment affected by both biomass burning and biogenic emissions. At the same time, the simultaneous measurements in the gas phase and the analysis of the meteorological conditions allow to link the aerosol composition to the changes in

the vertical structure of the atmosphere, in the combustion type, in the photochemistry and in other factors controlling the aerosol ageing and residence time.