



Vertical transport of tracers in the TTL simulated using a 3D mesoscale model

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The balloon HIBISCUS campaign took place in Bauru, Brazil, in January, February and March 2004, in coordination with the aircraft of the TROCCINOX campaign. The aim of this campaign was to study the air composition in the upper troposphere and in the lower stratosphere linked to deep convection in the tropics.

During this campaign, balloon borne and aircraft measurements were performed during a period of convective activity associated to the South Atlantic Convergence Zone (SACZ). Using a 3D mesoscale model, the CATT-BRAMS (Coupled Aerosols and Tracer Transport – Brazilian development of the Regional Atmospheric Modeling System), we simulate this period using the tracer advection capability of this model to study the vertical transport of tracers.

We use MOCAGE fields for the tracers initialisation and sources from databases for the emissions. We compare the model results to the measurements made with balloon borne instruments during the SF2 flight and to the measurements made with the Falcon aircraft. In particular, we use the CO concentration to study the transport of tracers by convection and by large scale processes.