

Experimento de Grande Escala
da Biosfera-Atmosfera na Amazônia

2ª Conferência Científica Internacional do LBA

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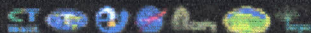


Centro de Convenções Studio 5,

Av. Rodrigo Otávio, 3555 - Distrito Industrial

Fone: (092) 216-3555 Manaus/AM

Organização:
Secretaria de Ciência e Tecnologia
LBA - Sistema Regional de Monitor. e Res. da Biosfera Amaz.
Tel: (92) 216-3555 - Fax: (92) 216-3556
Manaus - AM - Brasil



Soil-Atmosphere Flux of Carbon Dioxide in Undisturbed Forest at the FLONA Tapajos, Brazil

Hudson Silva¹, Patrick M. Crill¹, Michael Keller^{1,2}, Jadson Dias³, Peter Czepiel¹, Michael Palace¹, Eraclito Sousa Neto³, **Raimundo Cosme de Oliveira Junior**⁴

¹University of New Hampshire, Complex Systems Research Center, Morse Hall, Durham, N.H., USA 03824-3525; (603)862-0297; Fax (603) 862-0188

²USDA Forest Service, International Institute of Tropical Forestry, Rio Piedras, Puerto Rico

³Fundacao Floresta Tropical, Santarem, Para, Brazil

⁴EMBRAPA Amazonia Oriental, Santarem, Para, Brazil

E-mail addresses: hstlva@kaos.st.unh.edu, patrick.crill@unh.edu, michael.keller@unh.edu, hj@tap.com.br, peterczepiel@unh.edu, palace@kaos.st.unh.edu, eraclito@tap.com.br, cosme@cpatu.embrapa.br

In forests, the respiration of roots and soil dwelling organisms accounts for a large part of ecosystem respiration. We installed an automated chamber system for measurement of the soil-atmosphere flux of carbon dioxide (CO₂) in the Tapajos National Forest, Para, Brazil in April 2001. This is a mature forest site that is relatively undisturbed. Soils are clay textured oxisols. Mean annual temperature is 25°C and mean annual precipitation is 2000 mm of rain per year. A set of 18 aluminum chambers were installed in a 0.5 ha area close to the flux tower at the km 67 LBA site. Green surface was excluded. Eight of these chambers are closed individually and sampled for approximately 21 minutes about 5 times per day (closed 7% of the day). The other 10 chambers are sampled individually approximately once per day (closed 1.5% of the day). We measured CO₂ concentration with an IRGA (Campbell 6262). The IRGA response for zero and span gases was measured at 5 hour intervals. We found that during the late wet season (April – June 2001) CO₂ fluxes for the 8 frequently sampled chambers averaged about 3.2 $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$. Fluxes decreased slowly from the end of the wet season in June through the end of the dry season (November-December) when CO₂ flux averaged only about 1.8 $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$. With the onset of the rain in January 2002, fluxes increased rapidly to approximately 3.0 $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$.