

B02A-07

12:00h

Teresa

Morning after break

Close Window

id 3008  
RA101041  
2010-041

Proof

**CONTROL ID:** 854371**TITLE:** Hydrologic Simulation of Amazon Basins Using the Variable Infiltration Capacity Model (VIC)**PRESENTATION TYPE:** Poster Requested**SECTION:** Biogeosciences (B)**SESSION:** B09. Land-Water Interactions in the Amazon**AUTHORS (FIRST NAME, LAST NAME):** Daniel C Victoria<sup>1,3</sup>, Victoria Ballester<sup>3</sup>, Jeffrey E Richey<sup>4</sup>, Antônio R. Pereira<sup>5</sup>, Alailson V Santiago<sup>2</sup>**INSTITUTIONS (ALL):** 1. Monitoramento por Satélite, EMBRAPA, Campinas, SP, Brazil.

2. Amazônia oriental, EMBRAPA, Belém, PA, Brazil.

3. CENA, Universidade de São Paulo, Piracicaba, SP, Brazil.

4. School of Oceanography, University of Washington, Seattle, WA, United States.

5. ESALQ, Universidade de São Paulo, Piracicaba, SP, Brazil.

**ABSTRACT BODY:** The Amazon river basin is the largest fluvial system in the world, discharging 209,000 m<sup>3</sup> s<sup>-1</sup> to the ocean. It also sustains the largest continuous tropical forest system. However, the region is under constant pressure from deforestation and climate change. For such reasons, it's crucial to understand how the hydrological cycle functions, and tools like hydrological modeling can be used for evaluation of future scenarios and guide decision making. The Variable Infiltration Capacity Model (VIC v. 4.0.6) was evaluated and adapted to tropical conditions. Temperature, precipitation, wind speed, soil type and land cover maps were used to simulate the hydrological cycle in 6 sub-basins inside the Amazon: Santo Antônio do Içá, Japurá, Juruá, Negro, Madeira and Purus, covering the period from 1980 to 2006 at daily time steps. The simulation was not possible for basins with large drainage area located in the Andes (Santo A. Içá and Japurá), due to underestimation of the precipitation. For the other basins, simulated discharge agreed with observed records, even though evapotranspiration (ET) estimates showed some problems. The ET partitioning in its components, transpiration and canopy evaporation, showed severe discrepancies, with overestimation of rainfall interception by the VIC model, when used in daily time step. A limit to the evaporation of canopy stored water was imposed, fixing the high interception simulated but resulting in a reduction of estimated ET. A better parametrization of the interception process is necessary for the VIC model, when used at daily time steps.

**Contact Information**Daniel C. Victoria, Campinas, SP, Brazil, 13070-115, [click here](#) to send an email**INDEX TERMS:** [1876] HYDROLOGY / Water budgets, [1879] HYDROLOGY / Watershed, [1818] HYDROLOGY / Evapotranspiration.

(No Table Selected)

(No Image Selected)



## **Certificate of Participation**

### **The Meeting of the Americas 8 - 12 August • Iguassu Falls, Brazil**

Date: 08/12/10

This letter confirms that Daniel Victoria presented a paper titled “Hydrologic Simulation of Amazon Basins Using the Variable Infiltration Capacity Model (VIC)”, during Oral session in The Meeting of the Americas. The presentation was given in English. The conference took place 8-12 August 2010 at the Rafain Convention Center and Hotel.

Should you have any questions, please contact the AGU Meetings office at [ja-help@agu.org](mailto:ja-help@agu.org)

Sincerely,

*Tatiana de Freitas*  
Staff Representative