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1800h
B24A-07

Biomass Estimation of Agroforestry Systems in Pará, Brazilian Amazon

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Greenhouse gas emission as a consequence of land use in the Brazilian Amazon has called great attention of the scientific community. Forest conversion to pastureland and management options such as the use of fire is a major contributor, for example, to CO2 emissions. On the other hand, secondary succession and agroforestry systems (AFS) are options for carbon sequestration and may be part of strategies aiming at emission reduction. This work estimates biomass and carbon of different AFS in the Amazon as a contribution to the land use debate. The dendrometric data were obtained by means of an inventory carried out in 40 sampling plots, each composed of three sampling units, comprising 120 10x10-m sampling units. An average of 1,424.3 individuals ha-1 with a diameter at breast height ≥ 2.5 cm, belonging to 29 families and 54 species were inventoried. Considering the variability of vegetative stages, the different arrangements were divided into four classes: AFS 1, AFS 2, AFS 3, and AFS 4, based on structural parameters such as canopy height and ground cover. The estimation method, including allometric equations for different species and diametric classes, was used to calculate the aboveground biomass (AGB). The AGB average for the AFS was of 106.51 Mg ha-1 (13.63 Mg ha-1 for AFS 1; 50.30 Mg ha-1 for AFS 2; 93.36 Mg ha-1 for AFS 3 and 268.75 Mg ha-1 for AFS 4). The average carbon content in the AGB was of 47.93 Mg C ha-1 (6.13 Mg ha-1 for AFS 1; 22.63 Mg ha-1 for AFS 2; 42.01 Mg ha-1 for AFS 3 and 120.94 Mg ha-1 for AFS 4). These results indicate that AFS accumulate significant carbon amounts. Although these land use options have only local impact, regional assessments should not overlook their potential of contribution to carbon sequestration and to the resulting reduction in the greenhouse effect, besides providing better environmental, economical and social outcomes.

[0428] BIOGEOSCIENCES / Carbon cycling
[0439] BIOGEOSCIENCES / Ecosystems, structure and dynamics
[1632] GLOBAL CHANGE / Land cover change
Biogeosciences (B)
2010 Meeting of the Americas

New Search

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1815h **A24A-06** Predicting Damaging Frosts: Can Multi-variable Linear Regression Help Avoid Surprises?: **W E Frick**

A24B Room A1 Tuesday 1630h
Ocean-Land-Atmosphere Interactions in the Subtropical Southeastern Pacific II *(joint with OS)*

Presiding: **R Garreaud,** Universidad de Chile; **D A Rahn,** Universidad de Chile

1630h **A24B-01** Eddies in the Southeast Pacific and their influence on the upper ocean (*Invited*): **C F Moffat**, F Straneo, R A Weller

1655h **A24B-02** Upper-ocean turbulence beneath the stratus cloud deck of the Southeast Pacific (*Invited*): **J T Farrar**, C J Zappa, R A Weller, S P Bigorre, C F Moffat, F Straneo

1720h **A24B-03** Coupled Ocean/Atmosphere high-resolution simulation of the Coastal Jet off Central Chile: A case study of the October 2000 event: **L Renault**, B Dewitte, V Echevin, S Illig, G Vizoso, J Tintore

1737h **A24B-04** Daytime coastal jet maximum in central Chile (30°S) during VOCALS-CUpEx: **D A Rahn**, R Garreaud, J A Rutllant, R C Muñoz

1754h **A24B-05** The coastal wind jet along the central-southern coast of Peru (13-15°S): **K Takahashi**, J Quijano, K Latinez

1811h **A24B-06** Aerosol-cloud Interactions in Stratocumulus Clouds of the Southeast Pacific During Vocals-Rex: Individual Aerosol Particle Results of Transects With Strong Gradients Between Clean and Polluted Air Masses: **J Anderson**, C H Twohy, X Hua

Biogeosciences

B24A Room A3 Tuesday 1630h
Land Use and Forest Options for Greenhouse Gas Emission Reduction Strategies I *(joint with GC)*

Presiding: **C M Souza,** Imazon; **D C Morton,** NASA Goddard Space Flight Center

1630h **B24A-01** Science – Policy interface to enable climate mitigation strategies: Modeling and observation advances in support of carbon sequestration efforts in tropical regions (*Invited*): **D S Ojima**, D Baker, J Canadell

1645h **B24A-02** Pressures on Tropical Forests in the 21st Century (*Invited*): **R S DeFries**, T Rudel, M Uriarte, M C Hansen

1700h **B24A-03** Potential deforestation and CO_2 emissions across the highways BR-464 and 317 in the state of Acre, Brazil: **S S Silva**, E Mendoza, B Soares-Filho, S Perz, L B Hissa, E Amaral

1715h **B24A-04** REDD, commodity markets, and the end of Amazon deforestation: **D C Nepstad**, B Soares-Filho, F Merry, P Moutinho, A Lima, C Stickler, A A Alencar

1730h **B24A-05** Using atmospheric carbon to monitor forest carbon uptake and deforestation in Amazonia (*Invited*): **J B Miller**, L V Gatti, E U Gloor, H R da Rocha

1745h **B24A-06** A 10-year Record of Fire Emissions in South America Derived from Satellite-based Fire Occurrence Data: **I A Csiszar**, W Schroeder, K Longo, S R Freitas, C Schmidt, A W Setzer, J T Morisette, E Prins, J Brunner

1800h **B24A-07** Biomass Estimation of Agroforestry Systems in Pará, Brazilian Amazon: **M Batistella**, E L Bolfe

Earth and Space Science Informatics

IN24A Room Cedro I Tuesday 1630h
Earth and Space Science Cyberinfrastructures: Data, Tools, Distribution, and Forecast Systems for International Collaboration II *(joint with A, ED, H, OS)*

Presiding: **W G Almeida,** CPTEC/INPE; **G K Rutledge,** NOAA NCDC

1635h **IN24A-01** The Use of Supercomputing Systems in Meteorology: **J P Bonatti**, J Panetta

1655h **IN24A-02** Extracting Useful Information from a Grand Global Ensemble of Weather Forecasts: the THORPEX/TIGGE program: **P L Silva Dias**

1715h **IN24A-03** Long-term Data Legacy of the LBA-ECO Project: Persistence Leads to Success: **P C Griffith**, M Gentry, L M Horta, L Hook, R B Cook, T W Beaty, C Sanderson, M McGroddy

1730h **IN24A-04** LBA's Flux Towers Telecommunications System: **F D Magina**, D M Osawa

1745h **IN24A-05** WITHDRAWN

1800h **IN24A-06** Facilitating Data Access Using On-demand Data Delivery And Web Repositories: **G O Chagas**, L Carvalheiro, M Manso

1815h **IN24A-07** Unidata – Promoting Real-time Data Sharing and Use Worldwide: **T C Yoksas**, J L Caron, E Davis, S Emmerson, E J Hartnett, D Heimbigner, Y Ho, M James, J McWhirter, D Murray, R K Rew, M Schmidt, M K Ramamurthy

Geomagnetism and Paleomagnetism

GP24A Room Iguacu II Tuesday 1630h
Probing Tectonic Processes With Electromagnetic Methods II

Presiding: **J R Booker,** Univ. of Washington; **H Brasse,** Free University of Berlin; **M C Pomposiello,** CONICET; **A Favetto,** CONICET

1630h **GP24A-01** Crustal electrical conductivity structure near the Wenchuan Ms=8.0 earthquake suggests why stress accumulates in Longmenshan: **G Zhao**, Y Zhan, X Chen, J Tang, L Wang, J Wang, Q Xiao, M J Unsworth, Z Dong, J Yang, Z Wan, W Wang

1642h **GP24A-02** MAGNETOTELLURIC IMAGES OF COSTA RICA AND NICARAGUA: **H Brasse**, T Worzewski

1654h **GP24A-03** Magnetotelluric Study in the Western Border of the Río de la Plata Craton (Chacopampeana Plain and Eastern Sierras Pampeanas): **A Favetto**, V Peri, M C Pomposiello, V Rocha Fasola, R Garcia

1706h **GP24A-04** Payun-Matru Back-arc Basalts in S. Mendoza, Argentina Come From Sub-Continental Asthenosphere Beyond the Cortaderas Lineament More than 100 km to the South: **J R Booker**, A I Burd, R L Mackie, M C Pomposiello, A Favetto

1718h **GP24A-05** Overview of Electromagnetic Induction Studies in Brazil: **I Vitorello**, S L Fontes, A L Padilha, M B Pádua, M S Bologna

GP24B Room Iguacu II Tuesday 1730h
Magnetic Methods Applied to Hydrocarbon Exploration I *(joint with B)*

Presiding: **M Aldana,** Simón Bolívar University; **M Mena,** Dpto. Cs. Geologicas; **A R Muxworthy,** imperial College

1730h **GP24B-01** Paleomagnetism and diagenesis of the Mississippian Barnett Shale, Fort Worth Basin, Texas: **J Deng**, D Dennie, R D Elmore, S Pannalal, E Manning