

THE EARTH OBSERVING SYSTEM APPROACH FOR AMAZONIA

Getúlio T. Batista, INPE, Brasil
Jeffrey E. Richey, Univ. of Washington, USA

ABSTRACT

The Earth Observing System (EOS) is a long-term program with the purpose of understanding the Earth as an integrated system and to predict changes that might occur in our planet.

Amazonia being one of the major changing ecosystems of the Earth, it is natural that a proposal to study its hydrological and major biogeochemical cycles had been approved within the EOS program. This proposal addresses the question on how extensive land use changes are altering the routing of water and its chemical load from precipitation through the drainage system back to the atmosphere and to the ocean.

To understand the processes that occur in major river basins such as the Amazon is important not only locally but also when coupled with general circulation models to predict changes in global scale. Outflow from the drainage system carries nutrient and sediment loads which are modified by the vegetation cover. In addition, characteristics of the soil and hydrological and biogeochemical transformations are expected to change with change in land use and with the construction of dams on major tributaries. An important issue in this study is to determine the appropriate time and spatial scales to integrate small basins studies with large basin and global studies possible only with the integrated use of remote sensing, field measurements, and modeling techniques.

EOS will be launching in the beginning of 1997 several polar platforms with several instruments to provide long term global coverage. This paper describes the scientific objectives and general approach of our long-term proposal.

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