

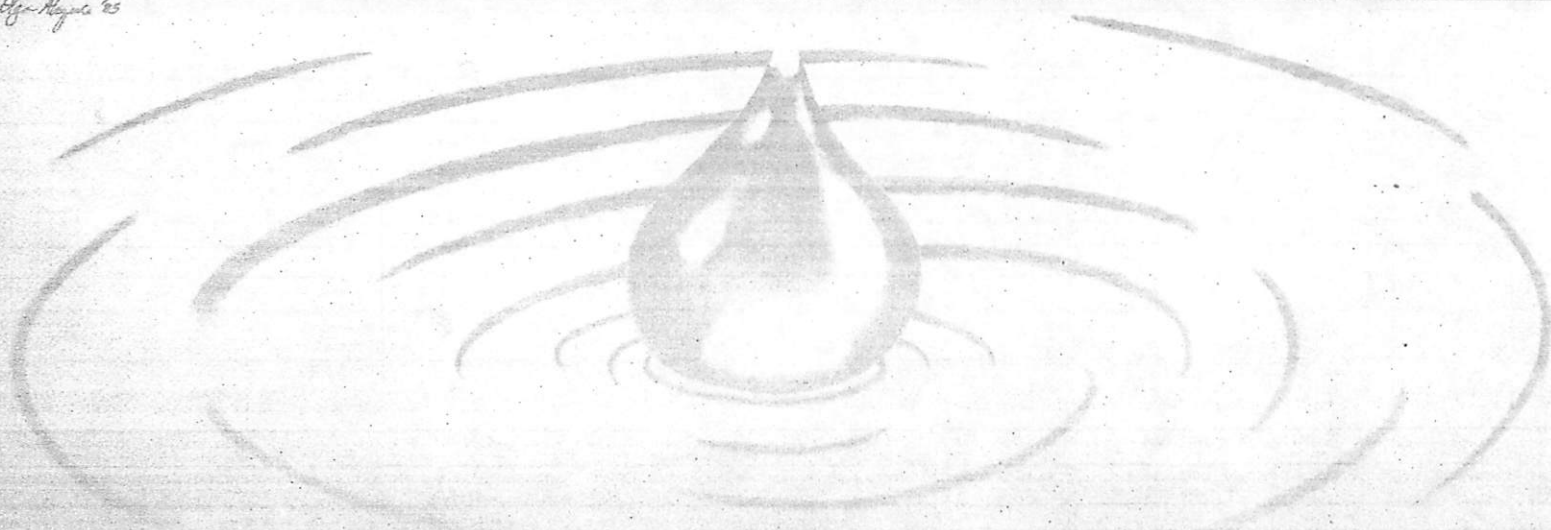
SYMPOSIUM ON TROPICAL HYDROLOGY

AND

2nd. Caribbean Islands Water Resources Congress



Elva Rojas '85



MAY 5-8, 1985

Condado Holiday Inn, San Juan, P.R.

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U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION

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INTERNATIONAL SYMPOSIUM ON
**TROPICAL HYDROLOGY AND
2nd CARIBBEAN ISLANDS
WATER RESOURCES CONGRESS**

Edited by
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and
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PREFACE

The subject of "Tropical Hydrology" is one that has recently become more popular in the water resources community. The importance of the tropics in the overall world hydrologic balance is now more evident in light of the potential changes in the world's climate and hydrology from human's activities. The investigations conducted in the great tropical areas in Africa (Central Congo Basin) and South America (Amazons River Basin) have shown that the hydrologic balance of these regions is crucial to the ecological balance of the world. Great changes in the globe's climate could result if the hydrologic systems in these and other tropical areas are significantly altered. The only means of determining whether any significant changes are occurring is through detailed investigations of the components of the hydrologic cycle in these tropical areas.

The investigations of tropical hydrology must include hydrologic systems smaller than the Congo and Amazons' basins. The belt of tropical regions in the world includes many smaller regions, peninsulas and islands that contribute significantly to the hydrologic balance of the world. Additionally, these smaller regions can serve as "laboratories" where many of the processes that take place in the much larger regions can be studied, documented, and simulated.

The hydrology of the tropics is affected by many factors that manifest themselves in a series of characteristics of the tropical regions of the world. Wind patterns, temperature, humidity, insolation, physiography, geology, drainage, and precipitation are among the principal factors. The manifestations occur in the form of trade winds, monsoons, tropical storms and hurricanes, high humidity, high temperature and evapotranspiration rates, floods, landslides and erosion. The investigations of these processes involves traditional methods in hydrology as well as new techniques.

The organization of this "International Symposium on Tropical Hydrology" followed a pathway that resulted in a natural division of the sessions presented at the meeting. The session on "General Hydrology" covers topics that bridge several of the manifestations of the hydrologic factors in the tropics. Since many islands fall within the tropical zones of the world, a significant number of papers were grouped in the "Hydrology of Islands" session. One of the principal characteristics of the tropics is the intensity and duration of rainfall, many times as part of storms and hurricanes which result in severe floods. The session on "Floods and Hurricanes" includes excellent examples of these characteristics. The rapid advancements in the area of simulation has resulted in the development of many modeling approaches toward hydrologic processes. These models are being applied in the tropical regions in an effort to better understand these systems. A cross section of models now in use were included in the "Modeling of Hydrologic Processes" session.

The study of the hydrology of the tropics is still in its initial phases. Many important investigations dealing with karst hydrology, ground-water quality, sedimentation and erosion processes, geochemical interactions, evapotranspiration, acid rain, aquifer characteristics, and many other topics are not covered in these proceedings. This opens the door for future symposia on the subject.

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