SYMPOSIUM ON TROPICAL HYDROLOGY

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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## TABLE OF CONTENTS

### Session I-A

**GENERAL HYDROLOGY**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Groundwater in Karst Zones of Somalia</td>
<td>Philip Roark</td>
<td>3</td>
</tr>
<tr>
<td>Tropical Deforestation and Evapotranspiration</td>
<td>Jeffrey C. Luuall, Geoffrey G. Parker, and Carl F. Jordan</td>
<td>7</td>
</tr>
<tr>
<td>Hydrologic Budgets for Undisturbed and Regenerating Tropical Rainforests on Hillslopes in Northeastern Costa Rica</td>
<td>Geoffrey G. Parker, Jeffrey C. Luuall, and Carl F. Jordan</td>
<td>11</td>
</tr>
<tr>
<td>The Effect of Irrigation Modernization on Groundwater Balance: South Coast of Puerto Rico</td>
<td>Gregory L. Morris</td>
<td>16</td>
</tr>
<tr>
<td>Heavy Metal Concentration in Sludge-Soil Systems as a Result of Water Infiltration</td>
<td>Lueny Morell de Ramirez, Jaime Benitez Rodriguez, and Francisco Barba</td>
<td>20</td>
</tr>
<tr>
<td>Runoff Disposal in the Limestone Region of Northern Puerto Rico</td>
<td>Jose C. Agrelot</td>
<td>26</td>
</tr>
<tr>
<td>Investigation, Analysis and Remedial Actions Taken for the Containment of Groundwater Contamination in a Karst Tropical Environment</td>
<td>Jose C. Agrelot and Bernabe Martir</td>
<td>30</td>
</tr>
<tr>
<td>The Joint Probability Approach to Design Hydrology in the Tropics</td>
<td>Michael L. Choate</td>
<td>32</td>
</tr>
<tr>
<td>Development of a Forest Water Resources Inventory for Puerto Rico</td>
<td>Wade L. Nutter and Richard G. Studenmund</td>
<td>36</td>
</tr>
</tbody>
</table>

### Session I-B

**HYDROLOGY OF ISLANDS**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response of Aquifer to Monsoon Rainfall in Central Java, Indonesia</td>
<td>Shaminder Puri</td>
<td>41</td>
</tr>
<tr>
<td>General Hydrology and Water Quality of Layou River in Dominica, Buccament River in St. Vincent, and Troumassee River in St. Lucia, British West Indies</td>
<td>Pedro L. Diaz, Ariel E. Lugo, and William H. McDowell</td>
<td>46</td>
</tr>
<tr>
<td>A Brief Analysis of Tropical Rainfall Extremes and Frequencies in Puerto Rico</td>
<td>Robert J. Caluesbert</td>
<td>56</td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Pages</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Water Quality and Chemical Evolution of Ground Water Within the North Coast Limestone Aquifers of Puerto Rico</td>
<td>Angel J. Roman-Mas and Roger W. Lee</td>
<td>57</td>
</tr>
<tr>
<td>The Relationship Between the Isotopic Composition of Precipitation and Hydrologic Systems in Jamaica and The Application of $^{222}$Rn in Measuring Groundwater Discharge to the Martha Brae River, Jamaica</td>
<td>Katherine Kelly Ellins, Errol Douglas, H. J. Simpson, and Sally Mathieu</td>
<td>63</td>
</tr>
<tr>
<td>Acid Precipitation in Puerto Rico: Seasonal Trends and Chemical Composition</td>
<td>William H. McDowell and Roberto Trinidad</td>
<td>68</td>
</tr>
<tr>
<td>Development of a Fresh Water Supply from the Water-Table Aquifer on a Barrier Island</td>
<td>Robert E. Kidd and Michael Planert</td>
<td>69</td>
</tr>
<tr>
<td>Hydrological Design in Presence of Limited Data</td>
<td>Eldon Garcia and Josefina Turbides</td>
<td>73</td>
</tr>
<tr>
<td>Strategies for Water Management on a Small Island</td>
<td>Owolabi Ajayi and Fernando Gomez-Gomez</td>
<td>76</td>
</tr>
</tbody>
</table>

Session II-A

FLOODS AND HURRICANES

Hourly Rainfalls Associated with Tropical Storms and Hurricanes Near the Upper Texas Gulf Coast | Jerry R. Rogers and John Grounds | 79 |

Influence of Tropical Storms on Runoff-Producing Rainfall in the Southwestern United States | Herbert B. Osborn | 83 |

A Proposed Rainfall Classification System | James D. Belville and Gary K. Grice | 87 |

Floods of April 18, 1983, on St. Thomas and St. John, U.S. Virgin Islands | Russell E. Curtis, Jr. | 90 |

Rainfall Extremes in Central and Southern Florida | Steve S. T. Lin and Thomas K. MacVicar | 96 |

Effect of Change in Landuse on Design Floods of Rural Catchments of Semi-Arid North-East Brazil | Seemanapalli Venkata Kameswara Sarma | 100 |

Quantifying Flood Discharges in Mountainous Tropical Streams | Vernon B. Sauer, Russell E. Curtis, Jr., Luis Santiago-Rivera, and Ralph Gonzalez | 104 |

A Hydrologic Solution for Urban Flooding in Teresina, Brazil | Julio Sanchez and Mario Simoes Lopes | 109 |

An Approach to Flood Simulation of Complex Floodplains | Joseph E. Gurule | 114 |
Session II-B
MODELING OF HYDROLOGIC PROCESSES

A Flash-Flood Prediction System
— Konstantine P. Georgakakos .................................................. 121

Farm Water Requirement
— Shie-Yui Liong ................................................................. 125

— Vicente Quinones-Aponte and Heriberto Torres-Sierra ................. 129

Comparison of Hydrology Models in a Tropical Island
— Emilio M. Colon ................................................................. 135

Modeling Virgin Islands Flood Hydrology Using HYMO
— James E. Scholl and Ronald L. Wycoff ..................................... 139

Homogenity of Nearshore Waters of Puerto Rico: A Contemporary Evaluation of Water Quality and Marine Biological Indicators
— Robert J. Reimold, Daniel W. Donahue, Ramon M. Guzman, and Ricardo A. Crane ......................................................... 143

Rainfall-Runoff Relationship in Moanalua Valley, Oahu, Hawaii
— Patricia J. Shade ................................................................. 146

Modeling of Solute Transport Through Ground-Water Systems
— Anand Prakash and Philip Sherlock .......................................... 150

Time-Series Analysis for a Semi-Arid Region Using the Theory of Runs
— Ubald Koch and Paulo R. G. Serrano de Andrade ...................... 154

Spatial and Temporal Storm Rainfall Characteristics in Puerto Rico
— Ismael Pagan-Trinidad and Walter Silva Araya ......................... 158

Session III
GENERAL HYDROLOGY

Filling in of Missing Rainfall or Flow Records in Monsoonic Climate
— Andrei Filotti, Y. D. Pendse, and A. S. Dhingra .......................... 165

Water and Environmental Studies of the Proposed Alto Sinu Hydroelectric Power Project in Colombia
— Richard C. Tucker ................................................................. 169

Recent Developments in Hydrologic Instrumentation
— Vito J. Latkovich ................................................................. 173