

熱帯降雨観測衛星 (TRMM) 降雨レーダ研究開発

はじめに

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THE RESEARCH AND DEVELOPMENT OF THE TRMM PRECIPITATION RADAR

INTRODUCTION

By

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The Tropical Rainfall Measuring Mission (TRMM) is a unique satellite program now being developed jointly by the United States of America and Japan. TRMM is the first space mission dedicated to measuring tropical and subtropical rainfall. Tropical and subtropical rainfall play a key role in global climate change. TRMM will fly with the first spaceborne precipitation radar. The TRMM project was a joint proposal from the Communications Research Laboratory (CRL), the National Space Development Agency of Japan (NASDA) and the National Aeronautics and Space Administration (NASA), and was approved at the 4th Standing Senior Liaison Group meeting in June 1986. Almost ten years have passed since that time, and the TRMM project is proceeding successfully due to the great efforts, cooperation and support of related agencies in both the USA and Japan, including NASDA and NASA's Goddard Space Flight Center. The TRMM observatory will be launched by the Japanese H-II launcher in the summer of 1997. I would like to express sincere gratitude to NASA, NASDA and related companies that helped the TRMM project to successfully overcome various challenges, and I look forward to continued close cooperation in the future.

In June 1990, the Communications Research Laboratory has already published a special issue on the TRMM project in the "Review of the CRL". In this most recent special issue on the research and development of the TRMM precipitation radar (PR), the research results of the TRMM PR and the data processing and analysis algorithms for several years are presented. For the TRMM project, CRL performed the conceptual design and developed the key components of the TRMM and an 8-element Bread Board Model which examined TRMM PR functions and performance. CRL also developed the on-board surface echo detection algorithm for the Engineering Model, the Active Radar Calibrator and an airborne precipitation radar to validate the TRMM PR. In addition to these activities, the TRMM group at the CRL has contributed to the development of the TRMM PR data processing and analysis algorithms in its capacity as the TRMM PR science team members in both the USA and Japan. The seven papers of this special issue will report on the fruitful results obtained from these research activities. I hope

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