

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Advanced Technologies for Space Communications and Navigation (7)

Author: Dr. YAO Guowei
China Academy of Launch Vehicle Technology (CALT), China

Ms. feng zhang
China Academy of Launch Vehicle Technology (CALT), China

THE DEVELOPMENT REVIEW AND APPLICATION PROSPECTS OF SYNTHETIC APERTURE
ANTENNA

Abstract

With the rapid development of navigation, communication, radar and electronic warfare technologies, the number and the kinds of antennas which belonging to airplane, missile, satellite have been increasing deeply. The problem of antennas' large volume, weight, high power consumption and cost become unacceptable. The technology of synthetic aperture antenna is a novel method to solve these problems without degrading antennas' performance or reliability. It synthesizes the RF antennas of wireless systems such as navigation, communication, radar and electronic warfare systems, realizes these RF antennas' functional integration, and reduces the number of antennas. Combining phase array technique advantages, the synthetic aperture antenna's function can be reconstructed by software controlling. This is very useful in fault conditions and increasing the flexibility and scalability of the antenna.