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Author: Dr. zhou tiezhong
China, 923980540@qq.com

PROGRESS OF THE ON-BOARD SAPPHIRE ACTIVE HYDROGEN MASER FOR THE ACES
SPACE MISSION OF CNSA

Abstract

Because of the CNSA scientific space mission “Atomic Clock Ensemble in Space” (ACES), aimed in particular at verifying fundamental general relativity laws. The space sapphire active Space Hydrogen Maser (SSHM) is part of the ACES mission of CNSA to overpass the medium term performance of the on-board primary cold atomic frequency standard. The Engineering Model of the SSHM is currently developed at the Beijing Institute of Radio Metrology Measurement has the long-term frequency stability of 2.3×10^{-15} /day, 45kg, and small volume than ever. In this article we report the latest developments on the latest progress of the SSHM.