

Poster Session (P)

Poster Lunch (1)

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THE APPLICATION PROSPECT OF AIR-CORE PHOTONIC-BANDGAP FIBER-OPTIC GYROSCOPE ON SPACE EXPLORATION

Abstract

The paper analyses the radiation effect, magnetic effect, the thermal effect and the polarization non-reciprocal effect of fiber-optic gyroscope caused by two kinds of fiber coils which are wound with common panda polarization maintaining fiber (PMF) and air-core photonic bandgap fiber (PBF), respectively. The performance of the two fiber coils were tested and the advantages of air-core PBF was validated. Furthermore, the optimization design on PBF were discussed to further depress the thermal coefficient, the radiation coefficient, magnetic coefficient and make the PBF match well with other devices in the FOG. Finally, the application prospect of air-core photonic bandgap FOG on space exploration is investigated.