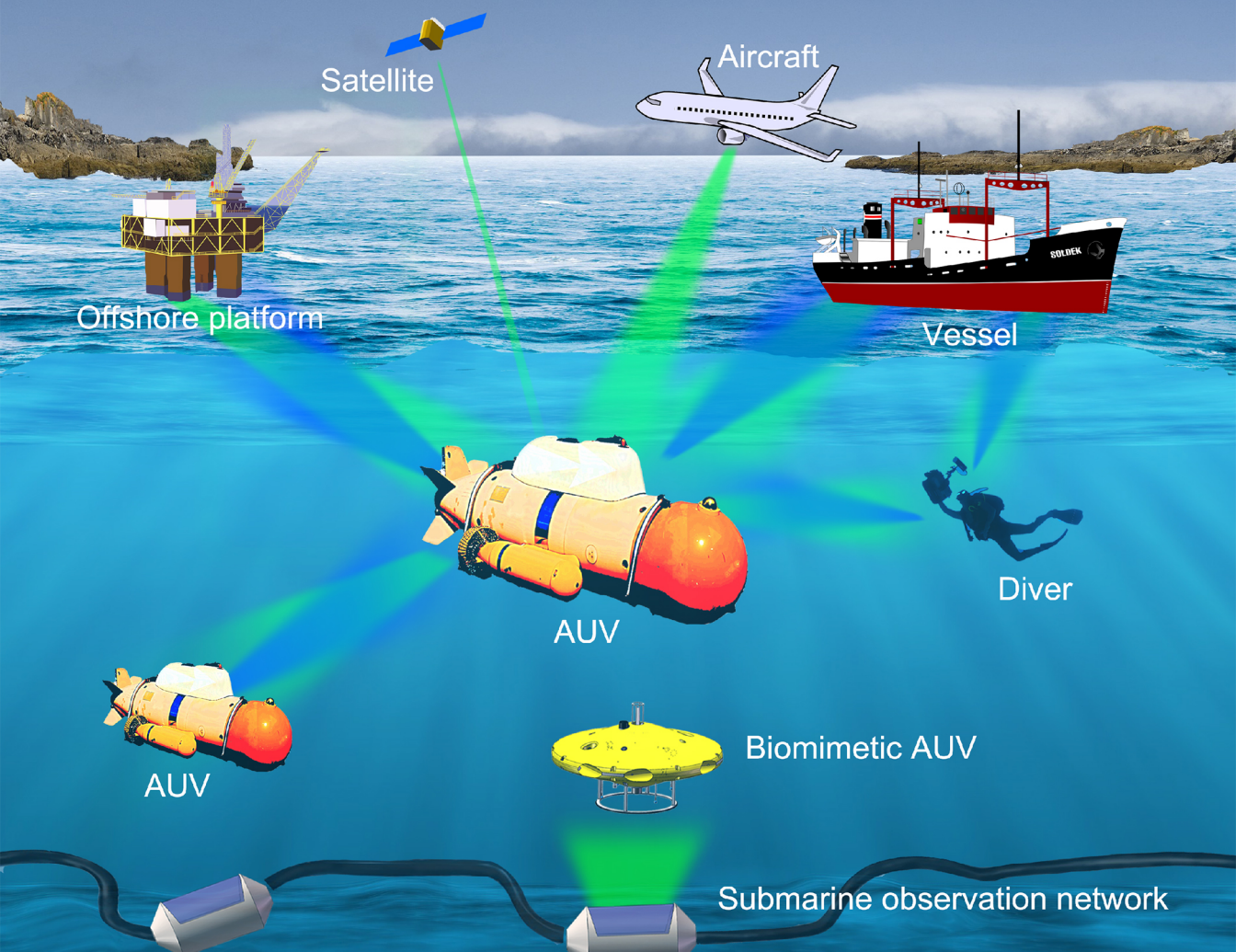


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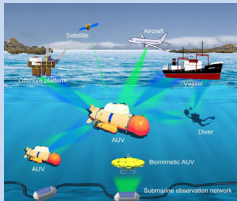
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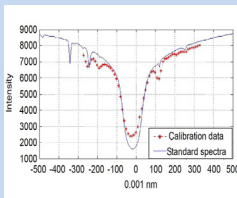
Link structure of underwater wireless optical communication and progress on performance optimization

190734

Zhang Yufan, Li Xin, Lv Weichao, Chen Jiawang, Zheng Minhui, Xu Jing

Underwater wireless optical communication (UWOC) can provide a high-speed and flexible communication link for underwater platforms. The basic structure of a UWOC link is introduced and the optimization schemes for a UWOC system is pointed out.

Article



A calibration method for Lyot filter

190049

Wang Jia, Liu Yangyi, Rao Changhui

Lyot filter is widely used in solar observation for spectra-scanning imaging. A new method was proposed to conduct the Lyot filter calibration experiment on-line while traditional method requires perfect stability of environment. The accuracy of the calibration experiment and the adaptability to environment were promoted.

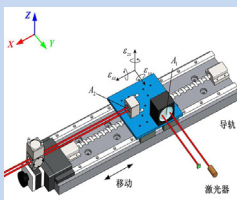


The consistent of laser pointing and theodolite tracking

190438

Jia Wenwu, Zhang Sanxi, Lei Tao

A dynamic correction method for laser pointing based on bias tracking was proposed. By keeping the target always at the center of the laser beam and keeping the laser ranging position consistent with the theodolite tracking and locking position, the effect of laser edge energy drop on the operating distance was effectively solved.



Research on field calibration method of straightness in five-degree-of-freedom measurement

190451

Su Yuhao, Duan Fajie, Jiang Jiajia, Fu Xiao, Zhang Cong, Liu Wenzheng

Based on the transceiver integrated laser five-degree-of-freedom measurement structure, the field calibration model was established. According to the calibration model and the angle measurement results of the five-degree-of-freedom measuring device, a compensation method of straightness calibration errors was proposed.

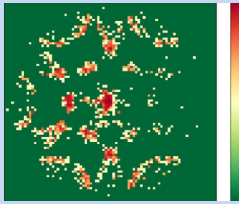


Lateral support structure for 600 mm primary mirror of laser communication

190485

Li Xiaoming, Zhang Tianshuo, Zhang Jiaqi, Li Xiang, Zhang Lizhong

The lateral support structure with a mercury band and central shaft was researched, and the impact of mercury band parameters on the surface error was analyzed. The designed lateral structure had small size and improved the surface quality of the mirror.

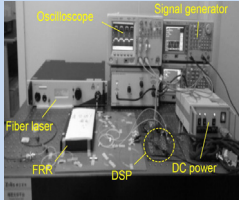


Optimizing the location of multiple laser guide stars in ground layer adaptive optical systems

190515

Li Caifeng, Jia Peng, Cai Dongmei

A method was proposed to obtain the optimal position of laser guide stars by using a genetic algorithm as the optimization algorithm and a simplified geometry model of the ground layer adaptive optic system as the evaluation function.

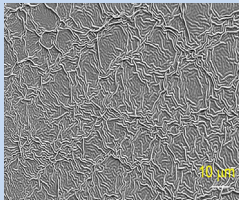


Research on laser frequency locking technology based on temperature and PZT control

190523

Lei Ming, Yu Huaiyong, Fang Yuan, Xiang Qiang, Yang Yi, Zhang Lizhe

A frequency tracking and locking control scheme based on laser temperature and PZT control was proposed. By taking advantages of the large range of laser temperature tuning as well as the high precision and high dynamicity of PZT tuning, tracking of the fiber laser's central frequency to the fiber ring resonator's resonance frequency was realized.

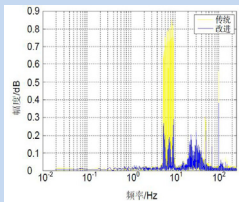


Impedance spectroscopy characteristics of nano ZnO doped liquid crystal/polymer film

190540

Zhu Qing, Liu Yourong, Jiang Zhipeng, Zheng Jihong

The electrical impedance spectroscopy characteristics of polymer dispersed liquid crystal doped with nano-zinc oxide rods and its sensing applications were studied. By doping nano-zinc oxide rods into the material, the sensing function of polar molecules such as ethanol gas can be realized through the analysis of electrical impedance spectroscopy.



Optimal design of Youla controller for vibration rejection in telescopes

190547

Niu Shuaixu, Jiang Jing, Tang Tao, Yang Tao, Bao Qiliang

On the concept of optimal force design, an improved wideband vibration rejection method based on Youla parameterization was proposed to mitigate vibrations for improving the closed-loop performance of telescopes.



Image dehazing algorithm by combining light field multi-cues and atmospheric scattering model

190634

Wang Xin, Zhang Xudong, Zhang Jun, Sun Rui

Image captured in foggy weather often exhibits low contrast and poor image quality. Aiming at these problems, an image dehazing algorithm was proposed by combining light field technology with atmospheric scattering model.