عنوان مقاله:

Principles of Operation and Control of Marine Gliders

محل انتشار:

دهمین کنفرانس بین المللی تحقیقات پیشرفته در علوم، مهندسی و فناوری (سال: 1401)

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خلاصه مقاله:

Underwater gliders are a new class of intelligent subsurface vehicles. Gliders use the endless power of the ocean waves to propel themselves negating the need for a motor by changing the net buoyancy as a driving force and changing its own center of gravity position, the attitude angle can be changed. With two-way satellite communications from the sea surface, gliders can send their data ashore and receive new mission commands, enabling powerful new concepts in making ocean observations. Many advantages, such as gliding with high efficiency, wide cruise range, less power consumption, low noise, and no pollution, make the underwater glider an important platform. Gliders generally have a hydrodynamic body with It has side and end fins that will control their movement under the water surface. Various sensors can be installed in this device so that it can measure various data including water flow speed, temperature, salinity, water flow direction, oxygen level, and water depth while moving. In this article, the operation of glider types, range and load capacity, and control strategies are discussed. The majority of gliders use classical controllers, which cannot dynamically compensate for un-modeled hydrodynamic forces and unknown variations in water current and wind. With increasing operational depths and larger payloads, control strategies will become an increasingly important aspect for these gliders.

کلمات کلیدی:

unmanned underwater vehicles, Glider, operation and control