Towed ocean bottom magnetometer to measure geomagnetic vector based on AMR sensor and SINS

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Abstract: The measurement of ocean bottom geomagnetic vector can provide geomagnetic vector diagram which reveals more detail of orebody distribution for ocean geologists. Former high-precision geomagnetic sensors meet difficulties when measuring geomagnetic vector and applying in ocean bottom. 3component fluxgate magnetometer should improve its sensitivity and reliability. This paper described a new Ocean Bottom Magnetometer in towed operation to measure geomagnetic vector with high sensitivity and reliability. Anisotropic Magneto Resistive sensor and Strapdown Inertial Navigation System are introduced. Long-distance data transmission system and simplified data visualization algorithm are also designed for practical operation.

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