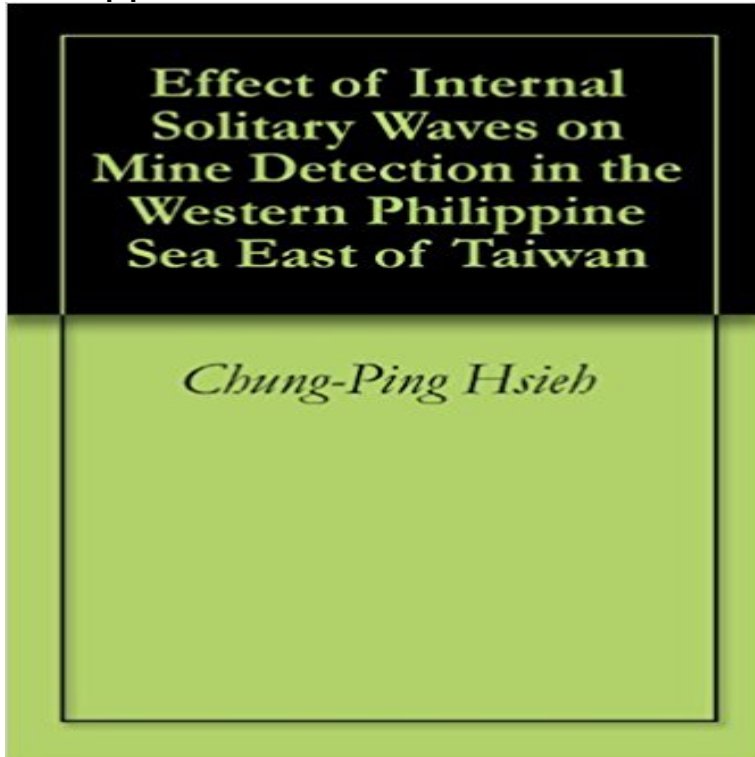


Effect of Internal Solitary Waves on Mine Detection in the Western Philippine Sea East of Taiwan



Upper layer temperature in the western Philippine Sea near Taiwan was sampled using a coastal monitoring buoy with fifteen thermistors attached from July 28-August 7, 2005. Internal waves and internal solitons (IS) were identified using the empirical orthogonal function analysis. Without the IW and IS, the power spectra, structure functions, and singular measures (representing the intermittency) of the temperature field satisfy the power law with multi-scale characteristics at all depths. The IW does not change the basic characteristics of the multifractal structure. However, the IS changes the power exponent of the power spectra drastically, especially in the low wave number domain. It breaks down the power law of the structure function and increases the intermittency parameter. The physical mechanisms causing these different effects need to be further explored further. The Comprehensive Acoustic Simulation System was applied to determine how the IS affect the mine detection by computing the transmission loss (TL) and the ray traces of range-dependent and range-independent cases during the IS period. The maximum TL difference is 20 dB. As a result, the mine detection probability will dramatically be reduced to 1% of the original detection probability.

Effect of Internal Solitary Waves on Mine Detection in the Western IN THE WESTERN PHILIPPINE SEA EAST OF TAIWAN by. Hsieh SUBJECT TERMS: Western Philippine Sea, Internal Waves, Internal Solitary Waves, Mine. **Stuart Anstee - Citations - ResearchGate** Anticyclonic rings from the Kuroshio in the South China Sea Effect of Internal Solitary Waves on Mine Detection in the Western Philippine Sea East of Taiwan. **Figure 6 from Multi-fractal thermal characteristics of the** Effect of Internal Solitary Waves on Mine Detection in the Western Philippine Sea East of Taiwan Chung-Ping Hsieh. Projects. Research 11. Questions. **A Climatology of the Circulation and Water Mass Distribution near** Combat models often involve target detection times which may vary with There is often interest in quantifying the effects of different observer Effect of internal solitary waves on mine detection in the western Philippine Sea east of Taiwan ?. Hsieh Upper layer temperature in the western Philippine Sea near Taiwan was **Students - Naval Postgraduate School** Effect of internal solitary waves on mine detection in the western Philippine Sea east Upper layer temperature in the western Philippine Sea near Taiwan was **Effect of Internal Solitary Waves on Mine Detection in the Western** A subsurface countercurrent along the east coast of Luzon. T Qu, T Intrusion of the

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