



### 对海面弱流场最佳观测的雷达遥感体制研究

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## Study on Optimal Radar System for Observation of Weak Current on Ocean Surface

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摘要

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摘要 对海面弱流场进行监测是海洋微波遥感的重要应用之一, 在海洋内波、浅海地形、水下运动目标监测等民用和军事领域都具有十分重要的意义。该文定义了海面弱流场和风生海杂波之间的信杂比; 以信杂比作为衡量标准, 在风速统计平均意义上, 研究了我国南海海域内实孔径雷达(RAR)/SAR/平飞斜视机载双站SAR对海面弱流场的最佳观测参数。3种雷达体制的信杂比对比分析表明, RAR信杂比最强, 最有利于探测海面弱流场。

关键词: 雷达体制 海面弱流场 调制机理 最佳观测参数

Abstract: Monitoring the weak ocean surface current is one of the most important applications for microwave remote sensing. It is significant for both civil and martial maritime activities. Signal Clutter Ratio (SCR) between ocean surface weak current and wind-generated waves is defined, in the frame of which the optimal configurations of RAR/SAR/biSAR with parallel flight squint mode are studied, under wind speed statistical distributions in South China Sea. The comparison results among the SCRs of the three sensor systems show that RAR, with the highest SCR, is the best system for weak ocean surface current observation.

Keywords: Radar system Weak current on ocean surface Modulation mechanism Optimal observation parameter

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