

数字化连续波声呐中的分段相关器

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摘要：在发射连续窄带噪声的相关声呐中，为了使相关输出不受回波起伏的影响，可以采用分段相关器。不同于常用的差频相关器，分段相关器中没有带通滤波器，因而便于在数字化系统中使用。本文导出模拟和极性相关器输出信噪比表达式，并给出确定段数和段长的基本原则。按照这些原则设计的分段相关器已成功地应用在实际系统中，取得了满意的效果。

Piecewise Correlator in Digital CW Sonar

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Abstract

Piecewise correlator can be used in sonars transmitting continuous narrow-band random signals to avoid decorrelation caused by phase fluctuation of received signals. Unlike a conventional heterodyne correlator, the piecewise correlator does not include a bandpass filter, making it particularly suitable to be used in a digital system. This paper derives the expressions of output signal-to-noise ratio for both analogue and polarity piecewise-correlators and gives some fundamental principles in choosing the number of pieces and their length. A polarity piecewise-correlator designed in accordance with these principles has been used in a practical system and produced satisfactory results.