

Abstract Submitted
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Non-Gaussian sonar clutter models JAMES LANDRY, PETER WE-
ICHMAN, EUGENE LAVELY, BAE Systems — A new method for interpreting
sonar signals in the presence of clutter is presented based on probability distribu-
tions following the formalism of the ideal gas. Likelihood detectors, used to evaluate
the presence or absence of a desired target, are extremely sensitive to the tails of
these distributions. The structure of the tails are highly sensitive to the underlying
clutter statistics, implying that detection of a target is extremely sensitive to the
underlying physics. We present simulations of non-Gaussian clutter and targets and
explore the sensitivity of detection to these physical models and their parameters.

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