

Using image quality measures and features to choose good images for classification of ISAR imagery

J.M. Steyn and W.A.J. Nel

**Abstract:**

Most research efforts in ISAR focus on techniques to form the image via autofocus or on classification (assuming that the ISAR imagery is already generated). An important step between image formation and classification is to determine which of the ISAR images generated by the sensor really provides the most useful information for classification. This paper proposes multiple quality measures (QM) to automatically select ISAR images that carry good classification information. These features are used to also investigate the effect of dwell-time on ISAR imagery. Measured data of maritime vessels are used to evaluate the quality measures and to determine the minimum dwell-time for ISAR image formation.

Keywords—ISAR (inverse synthetic aperture radar), Dwell-time, Quality Measure, Image Contrast, Image Entropy, SNR (signal-to-noise ratio), Maritime Vessels