

“Radar detection and track in presence of impulse interference by using the polar hough transform”, pp. 172-177

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Abstract – In this paper, the polar Hough transform (PHT) is considered as a track initiator in a track before detect (TBD) system. The study is performed in the presence of impulse interference. The algorithm under study includes a parametric CFAR detector, which works successfully in conditions of impulse interference and uses the polar Hough transform. The proposed Hough detector improves the detection probability in conditions of both Poisson and binominal random impulse flows. The usage of both CFAR and Hough transforms materially reduces the requirements to the input SNR in conditions of impulse noise. Another important advantage of PHT is that it is stability when the target velocity and azimuth vary in the time.