

Background Noise Suppression for Increased Data Acceptance. Christopher B. Clarke¹, John J. Degnan², Jan F. McGarry³, Julie Horvath¹. ¹Honeywell Technology Solutions Inc., Greenbelt, MD 20771, USA, ²Sigma Space Corporation, Lanham, MD 20706 USA, ³NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA

During the collocation of the Next Generation Satellite Laser System (NGSLR) with current NASA Standard System, MOBILAS-7, it was found that a centroid estimation of the return distribution using a 3 sigma RMS filter provided for a more accurate estimate of the target range than using peak estimates of the return distribution (~1.8 sigma RMS filter). One observed consequence of utilizing the 3 sigma RMS filter was the loss of valid passes with weaker signal due to the inclusion of background noise within and outside the signal distribution. A background noise suppression technique was developed and used prior to the centroid estimation such that these weaker signal passes were again viable and produced valid normal points. This paper will discuss the algorithm that was developed and present the effect of the algorithm on the quantity of valid normal points and the range determination of the normal points.