Title:

Enhanced target detection and identification in the Long-Wave IR using polarization

Authors: Dion D., D. A. Lavigne and J.-M. Thériault

Abstract:

In the last decades, Defence Research & Development Canada (DRDC) has been developing multi-band and hyper-spectral polarimetric imaging systems, together with dedicated processing algorithms, with the objective of enhancing target detection and identification performances in the EO-IR. This paper reports on experimental measurements made throughout the day using polarimetric wideband LWIR systems and using FTIR hyperspectral systems for the detection of plate targets deployed at various orientations with respect to the sensor line-of-sight. Results show that polarization can help increase contrast, allowing detection during the daily thermal cross-over periods. Moreover, we show that polarization provides an efficient means to detect and identify toxic contaminants deposited on targets.

Speaker:

First name: Denis
Last name: Dion
Affil. : DRDC Valcartier
Address: 2459 Blv. Pie-XI, North, Québec, Québec, G3J 1X5 Canada