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<http://esl.eng.ohio-state.edu/>

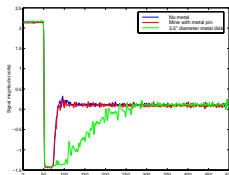
Multi-Sensor Data Fusion

- In many sensor applications no single sensor can produce acceptable detection rates
- By fusing data from several sensors improved performance can be obtained

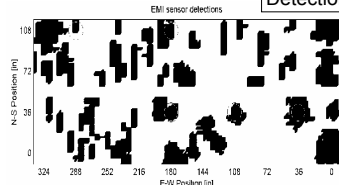
Schiebel AN-19/2 EMI Sensor



Example Sensor Data



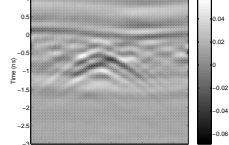
Metal Detector Detections



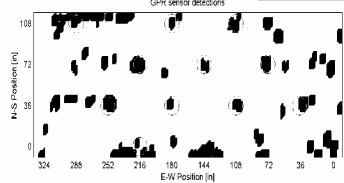
OSU Ground Penetrating Radar



B10-G with recursive estimation and alpha-beta



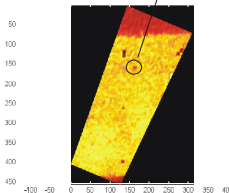
GPR Detections



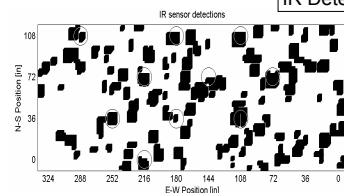
MWIR Camera



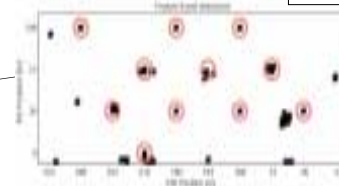
Mine surrogate



IR Detections



Fused output

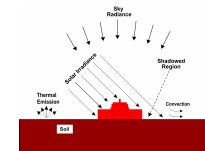


True mine positions are shown in red.

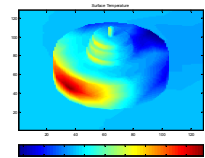
Infrared (IR) Signature Modeling

A multi-physics problem involving thermal and radiometric phenomena

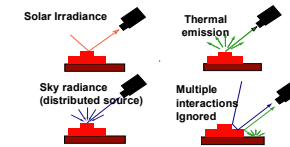
Thermal physics



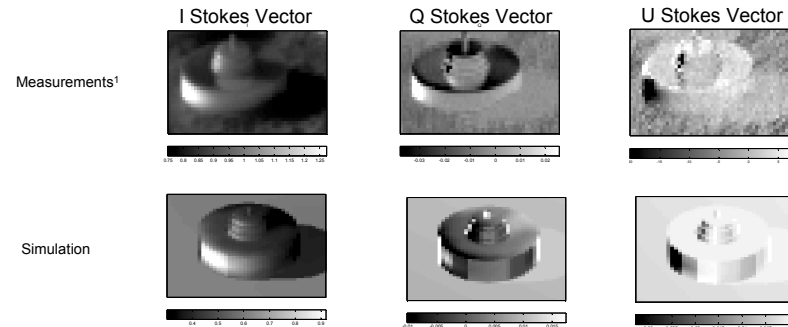
Example thermal signature



Radiometric contributions



Validation of polarimetric model for surface-laid mines



Simulations and measurements of mines in the field²

