

Experiments on scale reduction in infrared landmine detection

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Abstract

A method has been proposed to reproduce in the laboratory experiments of infrared landmine detection with reduced length- and time-scale. In this work, the method is verified experimentally.

Models of landmines are purposely built by a rapid prototyping technique. The surface response of the soil-landmine system is then monitored by an infrared camera. Preliminarily, the response measured above full-scale models is cross-checked against that measured above actual landmines. Full-scale and reduced-scale models are subsequently tested outdoors and in the laboratory, respectively. The measured distribution and time-evolution patterns of surface temperature are eventually compared, in order to assess the reliability of the scale reduction method.

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