

Simulation of the Earth's Electromagnetic Clearance System (DEMETER)

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Abstract

DEMETER is a magnetic field replicator. This system is designed to deceive anti tank mines. Numerical simulation (using COMSOL Multiphysics® software) allows to indicate DEMETER's performance in various environment and various configurations. The study of the magnetic field provide also an overview of mine-clearing tools disturbances on the field generated by DEMETER.

Figures used in the abstract

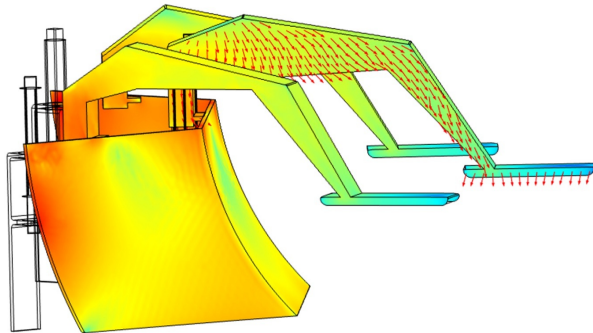


Figure 1: Channeling of the magnetic field by mine-clearing tools.

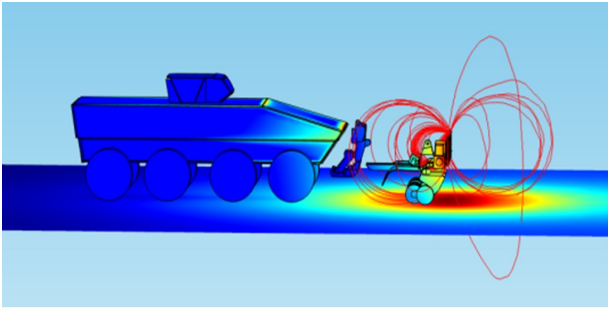


Figure 2: Mapping of the magnetic induction and spatial distribution of the magnetic field.

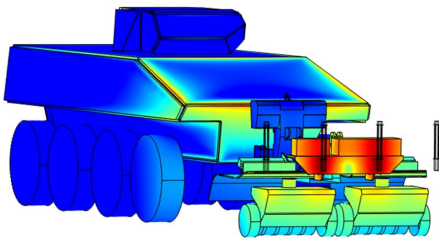


Figure 3: Joule effect due to the induced current.

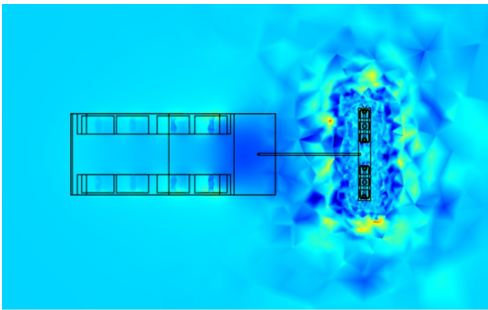


Figure 4: Delta of the field induced between a model with a vehicle and without a vehicle.