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ABSTRACT
PRESENTATION
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Benjamin Méthot is a M.Sc. student of electrical and electronics engineering at the Laval University in Québec (QC), Canada.

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MODELLING THE THERMOGRAPHIC INSPECTION OF STRUCTURES WITH FINITE ELEMENTS METHOD

Multiple non-destructive testing techniques, such as infrared thermography, have been used to inspect large structures and detect voids behind surfaces. Solar loading thermography is a technique that has been used experimentally but few models have been made to determine its theoretical potential. Finite elements models done with COMSOL show that under certain circumstances, voids located 1,5 meter below the visible surface may be detected in less than 20 days of continuous observation with an infrared camera, following lock-in thermography principles. This paper presents the key insights and limitations of the modelized thermographic inspections and validates the model with experimental data.