

**NON-DESTRUCTIVE STRUCTURAL TEST USING WAVES AND SOFT COMPUTING. CASE STUDY:
PILE INTEGRITY INSPECTION USING GENETICALLY OPTIMIZED NEURAL NETWORKS**

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Keywords: inverse problems, non-destructive testing, wave propagation, pile integrity testing,
island genetic algorithm, neural detectors

ABSTRACT

*Non-destructive testing of structures using wave propagation and reflection and soft computing
for the post-processing of the results is addressed in this contribution. As a case study, a neural
network based scheme and its decision mechanism are utilized to classify defects in piles.*

*Numerical simulation results are used, in combination to an island genetic algorithm, for the
neural detector initialization, as well as, for performance validation.*