

ABSTRACT

Non-destructive testing is an identification method used in science and technology industry to evaluate tested objects without destructing it. Eddy current testing is one of non-destructive testing method based on the interaction between magnetic field source and the tested object. All this time, research on the utilization of coil with Eddy current testing method use pair of coils which act as transmitter and receiver coils. The research on single transmitter coil and multi receiver coils already done with analysing the difference between two receiver voltages. The proposed research use multi coil system with single transmitter coil and multi receiver coils to determine the position of metal centre point in soil. The difference between voltages from receiver coils when there is metal coin buried inside the soil and voltages from receiver coils when there is no metal coin processed with centre of gravity method to determine the tested metal coin's centre point. From 121 tested coordinate points, 46 points yield error percentage under 20% on both coordinates, 35 points yield error percentage under 20% on one of coordinates, 19 points yield error percentage over 20% on both coordinates and on 21 points calculations cannot be executed.

Keywords: Non-destructive testing, multicoil, induced voltage, centre of gravity method