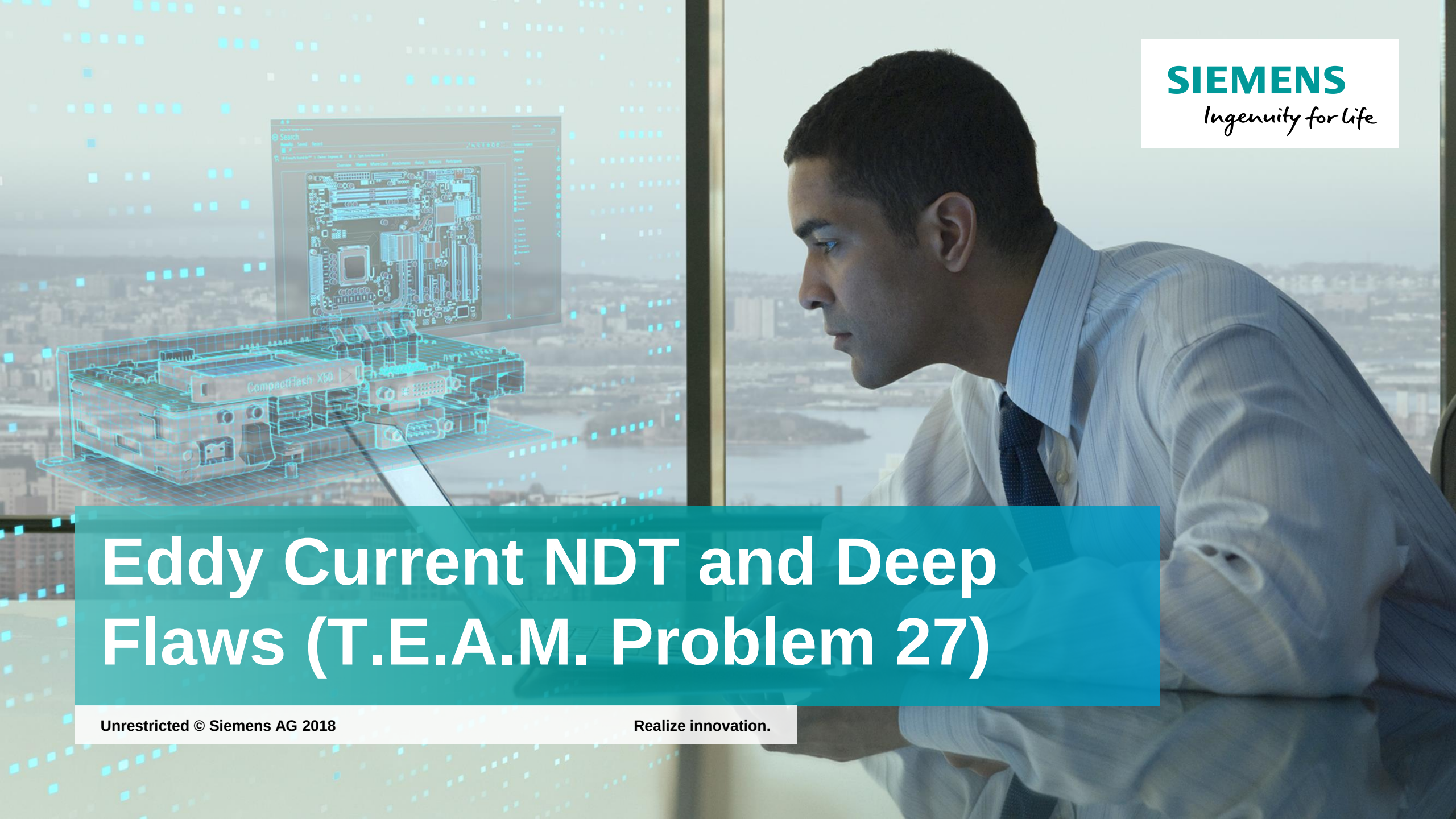

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# Eddy Current NDT and Deep Flaws (T.E.A.M. Problem 27)



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# Eddy Current NDT and Deep Flaws (T.E.A.M. Problem 27)

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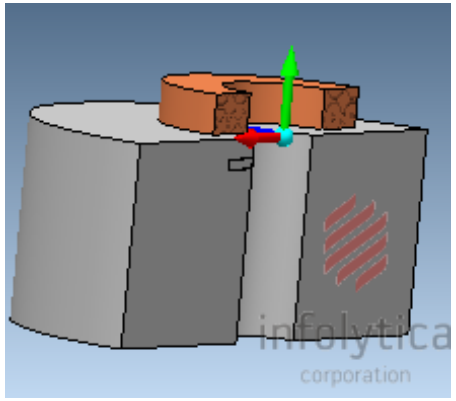
A coil is stationary over a sheet of aluminum that contains a screw hole. Inside of the screw hole, a flaw is to be detected by two Hall effect sensors. The sensors are used to measure the horizontal differential flux density.




A step waveform is created to power the coil; once the current is shut off, the horizontal flux densities at either end of the screw hole are differenced.

MagNet's transient solver correctly models induced eddy currents inside the aluminum plate after the current in the coil is turned off. This allows for the calculation of values such as the differential flux density.

The following is based on the Testing Electromagnetic Analysis Methods (T.E.A.M.) problem #27: Eddy Current NDT and Deep Flaws . The benchmark can be found on the International Compumag Society's website.

# Transient Probe Response to the Horizontal Flaw

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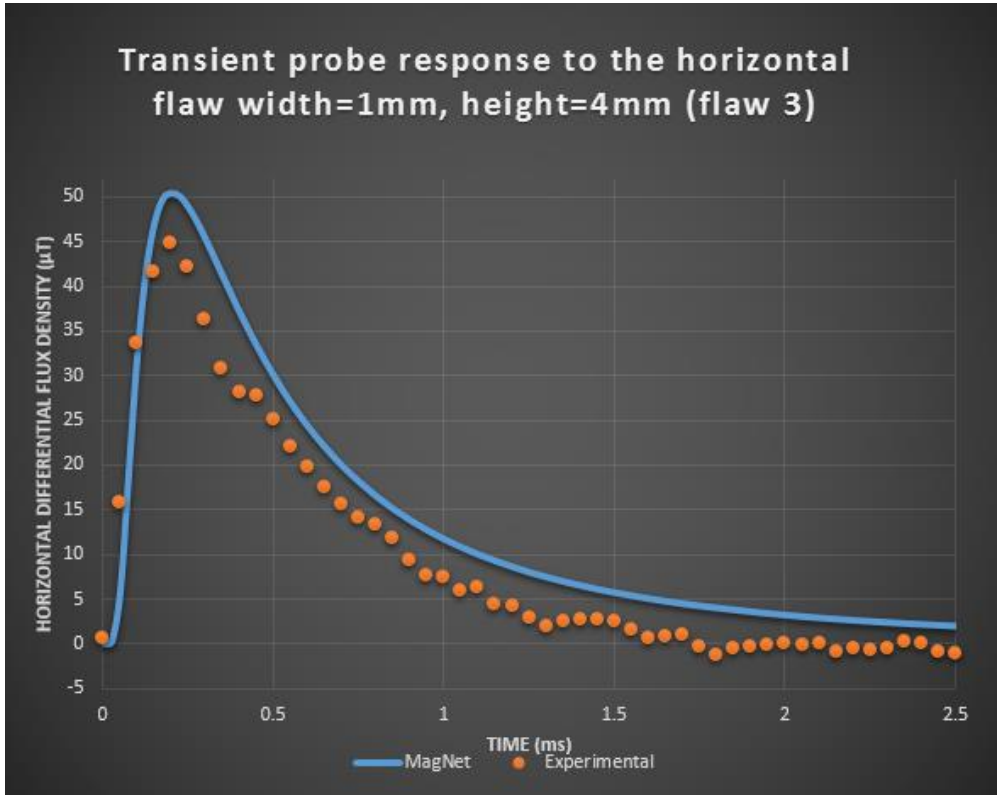
Comparing the horizontal differential flux density results computed in MagNet with the experimental results after the current has been shut off.



# Sampling Field Values

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With the Field Sampler feature, you do not have to model Hall effect sensors -- this tool will act as your sensor.