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Developments in Eddy Current based NDE Probes

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The design and operation of eddy current probes have evolved over the decades in terms of their ability to gather, process, present and analyze inspection measurements. Advances have been made in new eddy current probe designs to address the varied needs of different applications as well as to improve the performance of existing probes in terms of greater ability to detect smaller cracks embedded deeper in materials and accuracy of signal interpretation.

Secondly, advances in computing capabilities have led to development of computational models to simulate inspection of different probe and test geometries. These models serve an important role in design of new eddy current based sensors and systems. The solution of simulation models provide valuable insight into the underlying physics, help visualize the induced fields and currents and their interaction with sample flaws, predict performance of new designs and help optimize sensor design and develop algorithms for accurately interpreting the measured signals.

This talk will give an overview of the eddy current sensor systems as they have evolved to meet the needs of various applications, to maximize the POD of critical defects.