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**ELECTRICAL & COMPUTER
ENGINEERING**
TEXAS A & M UNIVERSITY

SEMINAR

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Dual-Path Digital Linearization of Wideband Radio Receivers Using a Non-linear Auxiliary Path

by

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Abstract: Cognitive radio (CR) communications arise as a solution to access the spectrum intelligently by detecting vacant channels in order to avoid interference and congestion. CR transceivers operate in a wideband regime that establishes stringent linearity requirements across every component in the front-end. In this seminar, a new digital dual-path calibration and cancellation technique for wideband LNAs will be presented. It is implemented by adding a non-linear auxiliary path along with two adaptively calculated coefficients used to cancel out the third order nonlinearities from the main LNA. In addition, two phase-correction methods are presented to account for the phase mismatch between the paths. Simulation results are shown to evaluate and compare the performance of the proposed technique with previous work.

Julian Camilo Gomez Diaz received his B.S. degree in electronic engineering from Pontificia Universidad Javeriana (PUJ), Bogota, Colombia, in 2014. He was with Huawei Technologies Co., Bogota, Colombia from 2014 to 2015. He is currently working towards his PhD degree at Texas A&M University, Texas, USA. His research interests include signal integrity, compressive spectrum sensing, and digital signal processing for analog and mixed-signal systems.