

Analog and Mixed-Signal Center  
3128 TAMU  
College Station, TX 77843-3128  
Tel. (979) 862-4253  
Fax. (979) 845-7161  
E-mail:hoyos@tamu.edu



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

## SEMINAR

Room 1003 ETB

September 3, 2018, 1:50 – 2:50 P.M.

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

by

Julian Camilo Gomez Diaz  
Texas A&M University

**Abstract:** As speed and bandwidth requirements increase, linearity becomes a more stringent consideration. Principally, the low-noise amplifier (LNA), that is the first block on the receiver chain, must tolerate interferences and guarantee high sensitivity. Linearization techniques must tackle several challenges like adding minimum power consumption, preserve noise figure, matching and gain. In this seminar, a digital dual-path linearization technique along with the design review of the analog blocks that form the front-end will be introduced. The linearization 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 path. In comparison with other dual-path linearization works, this linearization scheme offers lower complexity, includes phase-correction mechanisms to account for phase mismatch between paths and is inherently wideband.

---

**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 pursuing his Ph.D. at Texas A&M University, Texas, USA. His research interests include signal integrity, compressive spectrum sensing, and analog integrated circuit design.