

Passive switched capacitors filters and filtering ADCs

Prof. Antonio Liscidini

University of Toronto, Canada

Abstract:

This talk will introduce two different techniques tailored to the implementation of channel selection filters in wireless transceivers: passive switched capacitor circuits and filtering ADCs.

A new intuitive continuous-time model to describe switched capacitor filters will be introduced. The model easily allows to design high-order topologies even with complex conjugate poles without the need of any active device. A prototype of a third order Butterworth low-pass filter built by using only switched capacitors will be shown.

In the second part of the talk a filtering ADC is presented. Although the interferers are suppressed before the analog to digital conversion, the filter profile is entirely defined in digital domain through a re-configurable filter able to track and suppress unwanted interferers. Measurements results on a 28nm CMOS prototype will be provided.

Speaker's Bio:



Antonio Liscidini received his Ph.D. in Electrical and Computer Engineering at the University of Pavia in 2006. He is assistant professor in the Edward S. Rogers Sr. Department of Electrical & Computer Engineering of the University of Toronto. His research interests are in the implementations of transceivers and frequency synthesizers for cellular and ultra-low power applications.

He received the Best Student Paper Award at IEEE 2005 Symposium on VLSI Circuits and co-authored the Best Invited Paper Award at 2011 IEEE Custom Integrated Circuit Conference. From 2008 to 2011, he served as Associate Editor of the IEEE Transactions on Circuits and Systems II: Express Briefs and he served as Guest Editor of IEEE Journal of Solid State Circuits.

From 2012 to 2016 he served in the TPC of the International Solid State Circuit Conference (ISSCC) and he is member of the TPC of the European Solid State Circuit Conference since 2010.