

DL Matt Straayer Visits the IEEE SSCS Utah Chapter

The IEEE Solid-State Circuits Society (SSCS) Distinguished Lecturer (DL) Matt Straayer visited the IEEE SSCS Utah Chapter on 18 May 2018. In his talk, “Time-Based Circuits,” Straayer gave an introduction to time-based circuits and illustrated their uses with several examples from his own work. The lecture was held in the Sorenson Molecular Biology Building at the University of Utah. Students and faculty from the University of Utah and Brigham Young University and industry members from Cirque Corporation and On Semiconductor attended the event.

Abstract

Compared to circuits utilizing voltage or current to convey analog signals, time-based circuits offer unique attributes,

Straayer gave an introduction to time-based circuits and illustrated their uses with several examples from his own work.

noise shaping. Although time-based circuits are not new, the availability of fast, low-power transistors in advanced process nodes, combined with the challenges of traditional analog design techniques, has renewed interest in time as a signal domain both in academia and in industry. This talk will look at some obvious and more subtle differences between voltage and time-based circuits and discuss tradeoffs in the context of application requirements. A few advanced state-of-the-art time-based circuits will motivate the audience to consider how time-based circuits can be a useful tool for their own designs.

ranging from simple, area-efficient quantization to more complex techniques for time-based processing, such as integration, interpolation, and

—Abira Sengupta

Digital Object Identifier 10.1109/MSSC.2018.2844674
Date of publication: 13 August 2018



IEEE SSCS DL Matt Straayer with the lecture attendees.