

## **Challenges of Time-Interleaved ADCs**

**Dr. Aaron Buchwald**

Senior Technical Director at InPhi Corporation

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**Abstract:** The long-envisioned dream of moving the ADC of a communication receiver all the way to the antenna is fast becoming a reality. Recent ADCs that take advantage of time-interleaving and rely heavily on calibration enable new receiver architectures where the entire spectrum is digitized, leaving all channelization and demodulation functions to be accomplished in the digital domain. These "RF-to-Digital" systems have many advantages. However, the design of the requisite ADC remains a challenge to achieve wide-bandwidth and high-dynamic range while dissipating little power. This talk introduces key concepts of calibrated time-interleaved ADCs at a tutorial level. Examples of specific solutions are presented. Advanced concepts are also introduced. Finally, students wishing to pursue this area as a research topic will be exposed to several unsolved issues and hopefully will be inspired to extend the state-of-the-art with new and creative solutions.

**Biography:** Aaron Buchwald is a senior technical director at InPhi Corp and an adjunct professor at the Hong Kong University of Science and Technology. He received his Ph.D. in electrical engineering from the University of California, Los Angeles in 1993. His research interests are in data converters and mixed signal circuits for communication. He currently serves as an Associate Editor for IEEE Journal of Solid State Circuits and previously served on the Data Converters Subcommittee for the International Solid-State Circuits Conference.

*Hosted by Prof. Hossein Hashemi, Prof. Mike Chen, Prof. Dina El-Damak, and Prof. Mahta Moghaddam.*

*Organized and hosted by Jae-Won Nam.*