



IEEE Presents: fred harris

DSP Based Corrections of Analog Components in Digital Receivers

IEEE CLAS Chapters of the Communications, Signal Processing and Vehicular Technology Societies

Our first Chapter meeting since transferring from the LA Council (LAC) to the Coastal LA Section (CLAS) is open to all IEEE members, as well as non-members who may be interested in joining or just want to hear this special presentation by one of the most practical and insightful experts in our field, fred harris.

Note location change, we will hold future meetings at either Northrop Grumman or Aerospace.

Date/Time: 24 April 2008, Thursday **Pizza 6:00 pm** **Presentation 6:30 - 7:30 pm**

Location: Northrop Grumman, Building S – Forum, Redondo Beach, CA 90278

Enter at Simon Ramo Drive from Marine Avenue (East of Aviation Blvd)

Please RSVP by 17 April, to Ron Smith at ron.p.smith@ngc.com

Presenter: fred harris

Presentation: DSP Based Corrections of Analog Components in Digital Receivers

A signal collected in a quadrature receiver exhibits a number of undesired attributes. These include Gain and Phase Mismatch distortion due to the analog quadrature down-converter, DC offsets due to self mixing in the down-converter, bias in the Analog-to-Digital converters, and DC injection due to truncation arithmetic. Additional artifacts include spectral crosstalk (images) due to quadrature mismatch, spectral line intrusion in the down converted band and group delay distortion due to analog filters in the signal path. All these terms can be eliminated by DSP based techniques. This presentation will discuss and demonstrate the range of corrections that can be implemented in modern receivers.

A footnote: A reviewer of one of my papers once asked me “Why would an analog designer care about inserting DSP in his receiver?” My initial response, which I chose not to share with him was, “Because Moore is coming to eat your lunch!” If you didn’t understand that comment please attend the meeting to find out what it means!

Biography: fredric j harris

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I hold the Signal Processing Chair of the Communication Systems and Signal Processing Institute at San Diego State University where since 1967 I have taught courses in Digital Signal Processing and Communication Systems. I hold a number of patents on digital receiver and DSP technology and lecture throughout the world on DSP applications. I consult for organizations requiring high performance, cost effective DSP solutions.

I have written over 150 journal and conference papers, the most well known being my 1978 paper “On the use of Windows for Harmonic Analysis with the Discrete Fourier Transform”. I am the author of the book “Multirate Signal Processing for Communication Systems” and I have contributed to a number of other books on DSP applications including the *Source Coding* chapter in Bernard Sklar’s 1988 book, **Digital Communications** and the *Multirate FIR Filters for Interpolation and Resampling* and the *Time Domain Signal Processing with the DFT* chapters in Doug Elliot’s 1987 book **Handbook of Digital Signal Processing**.

In 1990 and 1991 I was the Technical and then the General Chair of the Asilomar Conference on Signals, Systems, and Computers and was Technical Chair of the 2003 Software Defined Radio Conference and of the 2006 Wireless Personal Multimedia Conference. I became a Fellow of the IEEE in 2003, cited for contributions of DSP to communications systems. In 2006 I received the Software Defined Radio Forum’s “Industry Achievement Award”. I am the Co-Editor-in-Chief of the Elsevier **DSP Journal**.

The spelling of my name with all lower case letters is a source of distress for typists and spell checkers. A child at heart, I collect toy trains and old slide-rules.



THE IEEE COMMUNICATIONS SOCIETY



IEEE COM-SPS-VTS Joint Chapter website: <http://www.ewh.ieee.org/r6/lac/csspsvts/IEEE.html>



IEEE CLAS Communications, Signal Processing and Vehicular Technology Societies

Directions to IEEE Meeting at Northrop Grumman Building S - Forum, Redondo Beach

Access Building S - Forum Entrance at lower level on North side of building

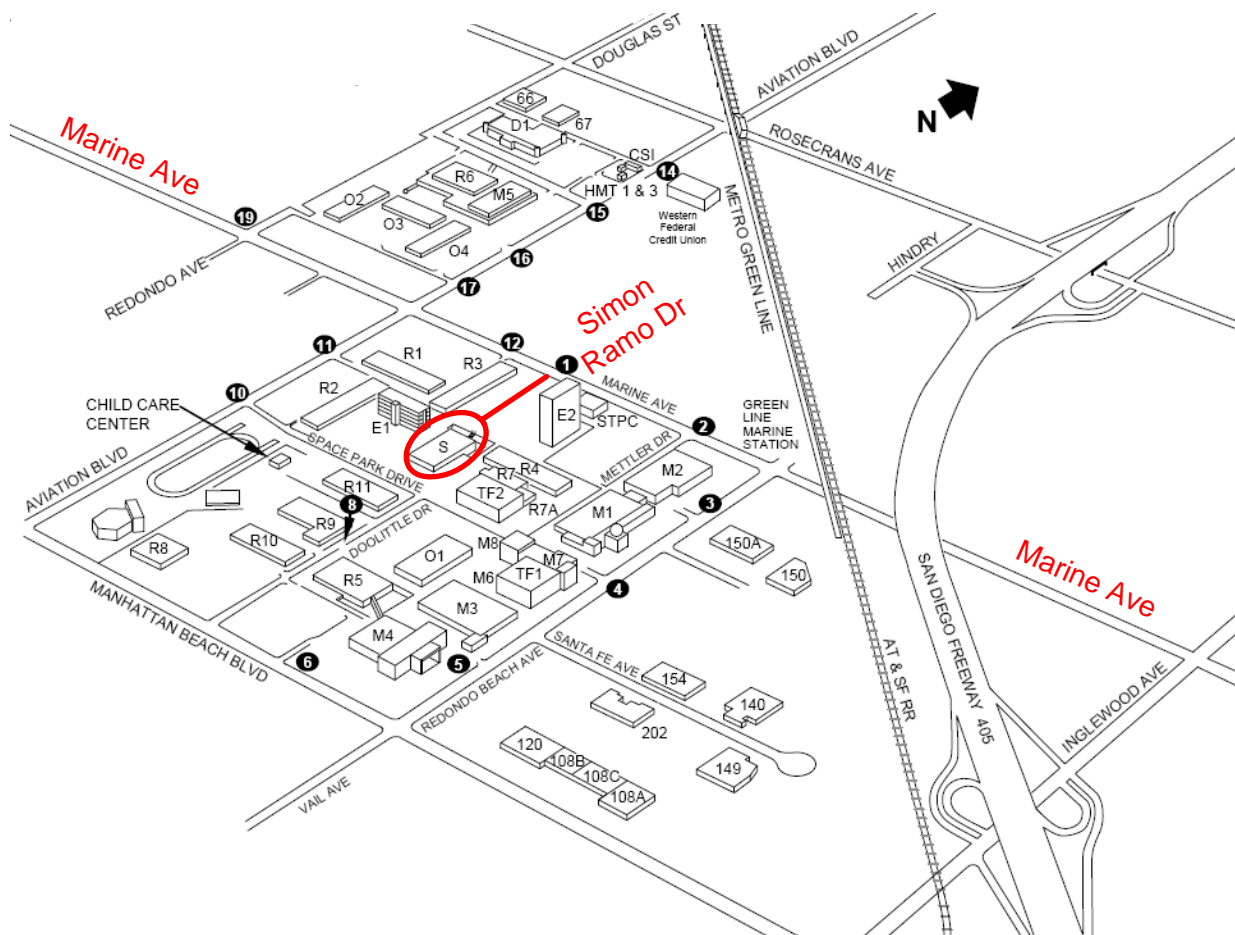
For online map search for 2100 Marine Ave, Redondo Beach, CA 90278
Near Metro Green Line – Marine / Redondo Station

From South of Redondo Beach:

I-405 North
Take Inglewood exit
Right on to Inglewood Ave. (North)
Left on Marine Ave.
Left on Simon Ramo Dr.
Building S is at end of road
Park just North of building
Walk down stairs to Forum Entrance

From North of Redondo Beach:

I-405 South
Take Rosecrans exit - West
Right on to Rosecrans Ave. (West)
Left on Aviation Blvd.
Left on Marine Ave.
Right on Simon Ramo Dr.
Building S is at end of road
Park just North of building
Walk down stairs to Forum Entrance



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