TITLE: **A Trap to avoid: A DSP Based Radio is NOT a Digitized Analog Radio.**

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Abstract: It is tempting to visualize the I-F and base-band processing of an analog receiver as the prototype and model of the signal processing functions to be synthesized in the DSP version of a receiver. If we approach the DSP insertion and system design task from this perspective will be led to a digitized emulation of an analog design. DSP techniques can offer significant improvement over such a realization. In particular, DSP offers a design option not readily available to the continuous analog design: the use of time varying filters. Filters with time varying components can effect linear frequency translation as a desired side effect of their primary processing task of bandwidth reduction. Filters with time varying coefficients fall within the classification of multi-rate signal processors. In this presentation we present a number architectural options and demonstrate performance advantages offered by filters with periodically time varying coefficients in a DSP based receiver.