KEYNOTE PRESENTATION

Hilbert, Poisson and other Relationships

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The *Hilbert relationships or transforms* are well known and extensively used in Signal Processing. However the corresponding *Poisson relationships or transforms* are not as extensively known or used. In essence both Hilbert and Poisson transforms are concerned with minimum phase systems. The *Hilbert transforms* solve the following two problems

- Given the amplitude response, perhaps as a list of possibly equidistant numbers, to determine the phase response

- Given the phase response to determine the amplitude response

The *Poisson transforms* solve the following four problems

- Given the amplitude, or phase response, perhaps as a list of possibly equidistant numbers, to determine the phase or amplitude response possibly at some other contour

There are significant links between Hilbert and Poisson transforms and important extensions to both.

The talk will be focused on the development of the fundamental relationships involved in these transforms and their extensions. Some applications will also be outlined.