Meeting: 1000, Albuquerque, New Mexico, SS 10A, Special Session on Multiscale Methods and Sampling in Time-Frequency Analysis

1000-41-150   **Michelle D Quirk*** (`pal@c3.lanl.gov`), Los Alamos National Laboratory, CCS-3/Modeling, Algorithms, and Informatics Group, Los Alamos, NM 87544. *Optimality on compact sets of filter banks.*

This work is a new approach to optimal finite impulse response filter banks theory. The optimality criteria are explicitly stated as continuous functions defined on compact sets of finite dimensional linear spaces. A theorem on the existence of optimal finite impulse response filter banks is given. Such optimal filter banks exist regardless of the bit rate and the bit allocation strategy. An algorithm to find these optimal filter banks is introduced. This algorithm is used to design coding gain optimal two-channel finite impulse response filter banks that may be embedded into JPEG-2000 Standard for more efficient compression of multicomponent images. (Received August 23, 2004)