



## PULSE SHAPE DESIGN USING ITERATIVE PROJECTIONS (WedPmPO1)

★ Author(s) :

H. Emre Guven  
A. Enis Cetin

(Aselsan Inc., Turkey)  
(Bilkent University, Turkey)

★ Abstract :

In this paper, the pulse shape design for various communication systems including PAM, FSK, and PSK is considered. The pulse is designed by imposing constraints on the time and frequency domains constraints on the autocorrelation function of the pulse shape. Intersymbol interference, finite duration and spectral mask restrictions are a few examples leading to convex sets in  $L_2$ . The autocorrelation function of the pulse is obtained by performing iterative projections onto convex sets. After this step, the minimum phase or maximum phase pulse producing the autocorrelation function is obtained by cepstral deconvolution.