

CEG4311

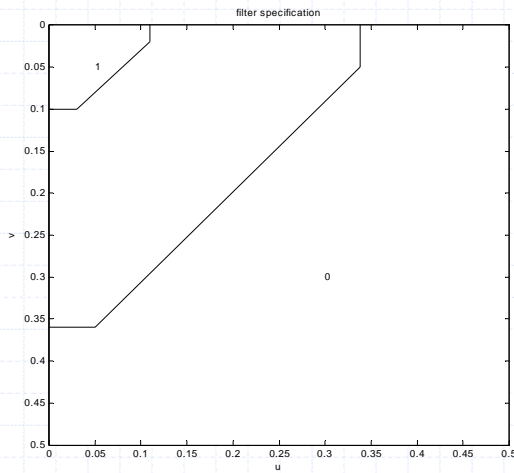
2D Filter design

Eric Dubois

Filter design steps

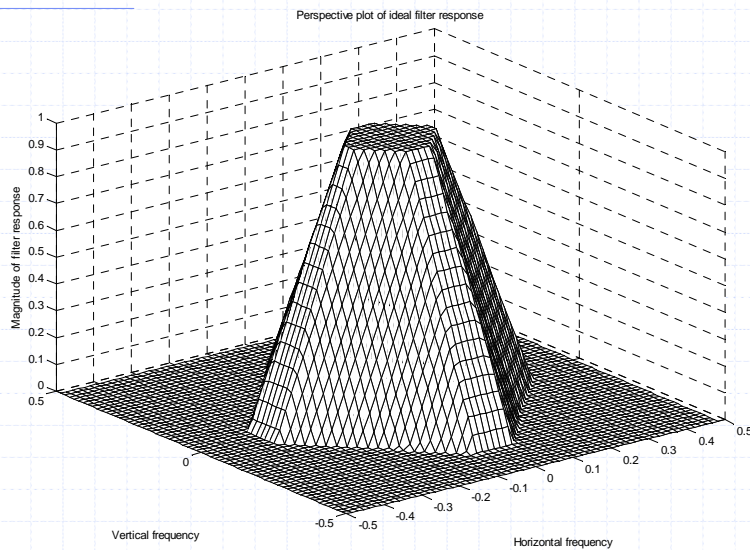
- ◆ Select the ideal filter response specs – pass band and stop band
- ◆ Generate a piecewise linear ideal response
- ◆ Generate a filter using the window method
- ◆ Refine the filter using least pth optimization

Filter specification

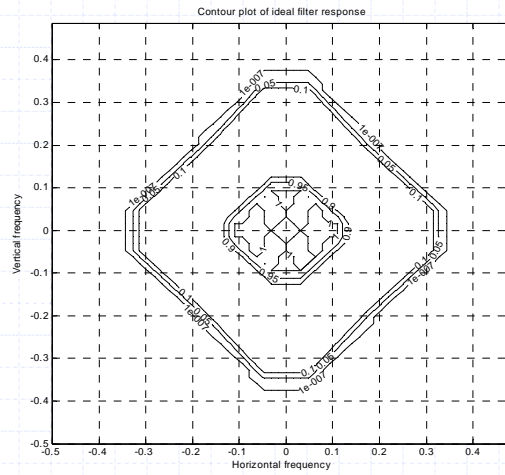


u	v	val
0.000	0.00	1.0
0.110	0.00	1.0
0.110	0.02	1.0
0.000	0.10	1.0
0.030	0.10	1.0
0.070	0.06	1.0
0.338	0.00	0.0
0.338	0.05	0.0
0.050	0.36	0.0
0.000	0.36	0.0
0.184	.205	0.0
0.500	0.00	0.0
0.000	0.50	0.0
0.500	0.50	0.0

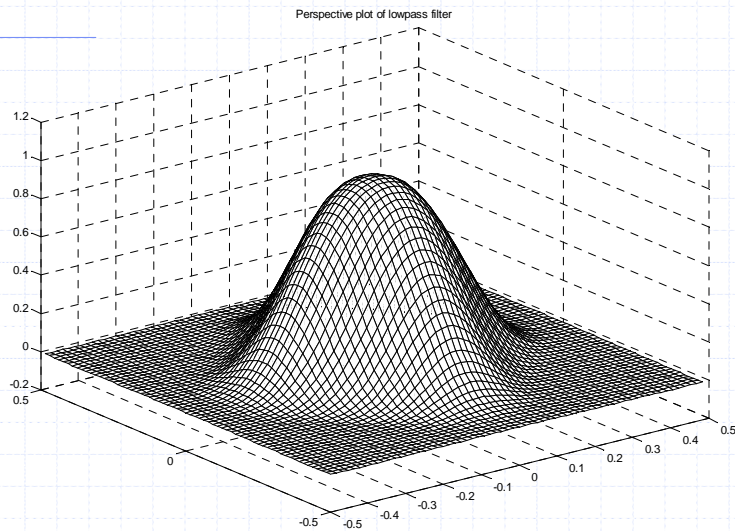
Ideal response – perspective view



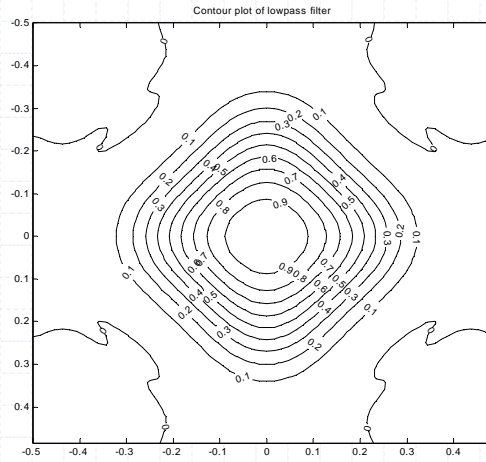
Ideal response – contour plot



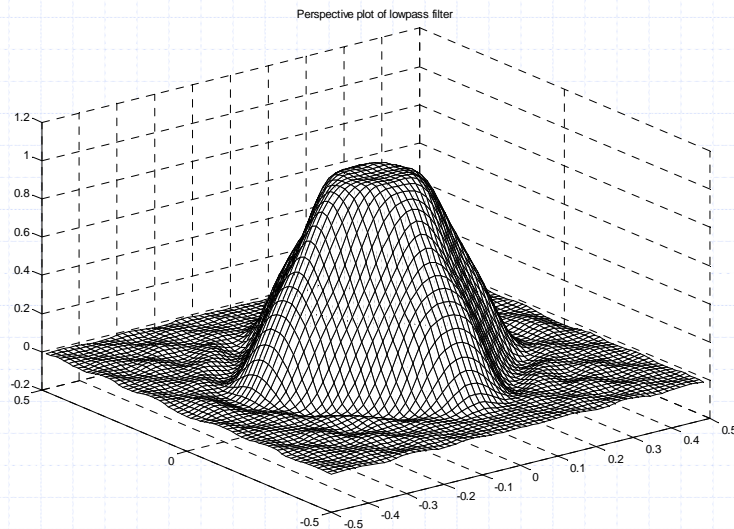
Window design – perspective view



Window design – contour plot



Least pth filter – perspective view



Least pth filter – contour plot

