BANDPASS FILTER APPROXIMATION CHOICES

1. Transform from low-pass transfer function:

   a. reactance transformation – simple but restricted;

   b. Moebius transformation – more general, but tricky.

$\omega_{p1}\omega_{p2} = \omega_{s1}\omega_{s2}$
Stopbands symm in log, freq

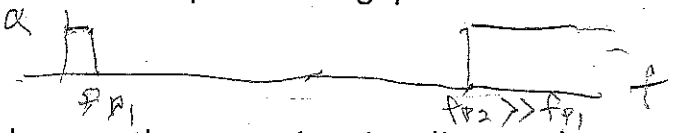
2. Direct design: $(\omega^2 - \omega_0^2)^{n/2}$

   a. maximally flat passband, arbitrary stopband – simple, but not selective;

   b. equal-ripple passband, arbitrary stopbands – more selective, but trickier. Cheb. rational

3. For very wide passband, use a cascade of a lowpass and highpass filter.

   Passband ripples combine.



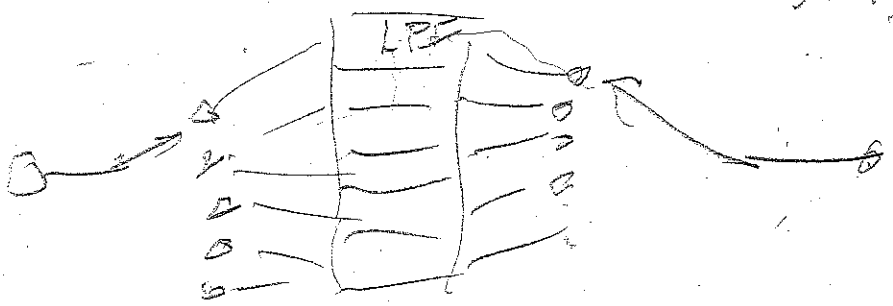
4. For narrow-band filters with flat delay, use the approximation discussed on pp. 533-535 in the book.

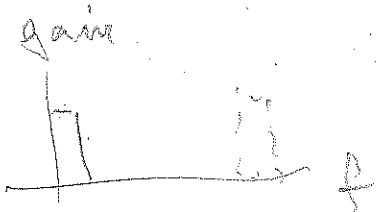
For narrow-band filters, selective loss response

N – path filter

Franks – Sandberg

BSIJ





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