

Concept Question 6-10: Why is it not advisable in practice to select the real part of the notch filter's poles to be extremely small?

The real part of the poles in a notch filter specify how fast the impulse response decays to zero. If the real part of the poles are small (close to the imaginary axis), then the impulse response, and hence the transient response of the notch filter, decays slowly to zero. This may not be an issue if a "warm-up" time for the notch filter is permissible.