

### 3 Answers

1. Use a Gaussian window - the Fourier transform of a Gaussian is a Gaussian
2. Log-scale the spectrum to emphasize peaks and turn the Gaussian peaks into parabolic peaks
3. Use parabolic interpolation to find the true peaks.

Note that, as mentioned in §D.1, the Gaussian window transform magnitude is precisely a parabola on a dB scale. As a result, quadratic spectral peak interpolation is *exact* under the Gaussian window. Of course, we must somehow remove the infinitely long tails of the Gaussian window in practice, but this does not cause much deviation from a parabola, as shown in Fig.3.30.

[https://ccrma.stanford.edu/~jos/sasp/Quadratic\\_Interpolation\\_Spectral\\_Peaks.html](https://ccrma.stanford.edu/~jos/sasp/Quadratic_Interpolation_Spectral_Peaks.html)

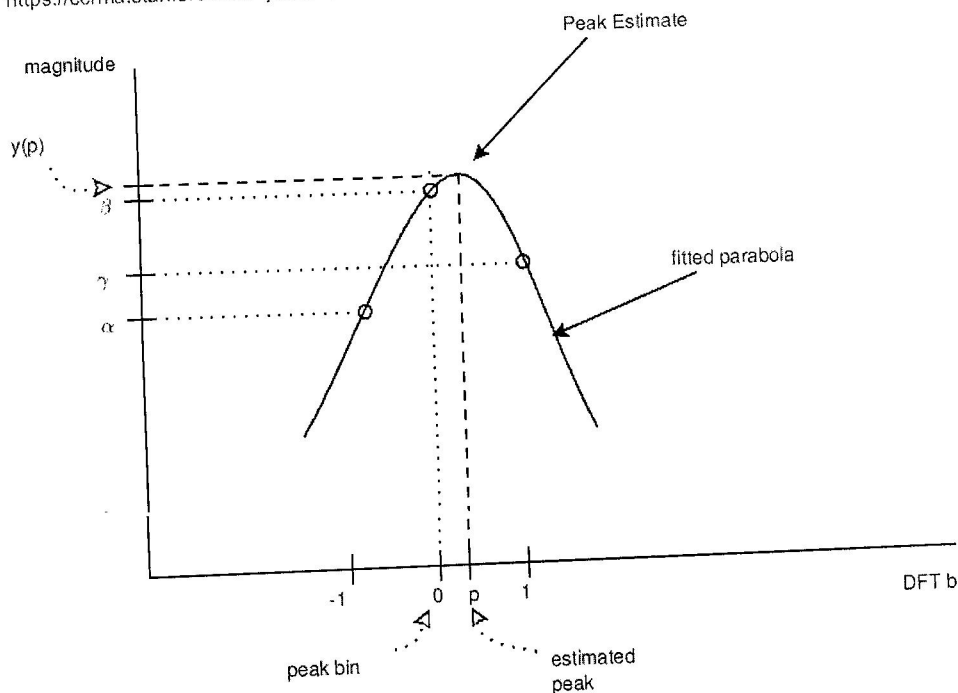


Figure 12.1: Illustration of parabolic peak interpolation using the three samples nearest the peak.