Zero Filling – Getting More Data Points in the Spectrum

- The NMR Spectrum is Not Continuous: the Horizontal Scale is Divided into Discreet Data Points
- Digital Resolution is the Frequency Spacing of Data Points in the Spectrum:

  Digital Resolution = Hz / point = SW / [# of Data Points]
- If Digital Resolution is Too Low, Peaks Look "Spiky" Rather Than Smooth and J Coupling Information is Lost
- The Fourier Transform Gives the Spectrum the Same Number of Data Points as the FID
- To Get More Data Points in the Spectrum, Just Add More Data Points at the End of the FID with Zero Intensity Value: "Zero Filling"
- The Fourier Transform Likes Powers Of Two: 2^n Data Points in the Zero-Filled FID = 16384, 32768, etc.