

2D Data Processing

- The 2D Spectrum is a Matrix of Data Values:
 - e.g., 1024 Rows x 2048 Columns
- Each 1D FID is Fourier Transformed and the 1D Spectrum (the F_2 Spectrum) is Loaded into a Row (from Bottom Row Up Increasing t_1 Values)
- The Columns Represent FIDs in the Artificial Time Dimension t_1
- The Frequency of the FID is the Chemical Shift of Nucleus **I** That was Recorded During the t_1 Delays
- Each Column is Fourier Transformed to Give an F_1 Spectrum Running from Bottom to Top
- The Column at the F_2 Chemical Shift of **S** Now Has a Peak at the F_1 Chemical Shift of **I**: A “Crosspeak”
- Intensity of the Crosspeak Depends on the Efficiency of Transfer of Excitation **I** to **S**
 - For J Coupling Based Transfer, the Efficiency is Greater for Larger J Couplings
 - For NOE Based Transfer, the Efficiency is Greater for Smaller Distance ($1 / r^6$ Dependence)