COSY with Topspin - Reference For ZEUS/ARTEMIS/HADES

1. Setup and obtain a 1-D proton spectrum. Be sure to check the tuning and matching of the probe – see instructions in this binder. Determine the optimal spectral window around your peaks of interest allowing for ~ 0.5ppm on either side of your peaks. If your resonances fall between 1-8 ppm, you should select a **sw** of 8 (from 0.5ppm to 8.5ppm). The center of your spectrum is called **o1p** and for the above example it would be 4.5ppm. Record **sw** and **o1p**.

2. Type **edc** [enter] and change the experiment number to **2 (**or type **iexpno** [enter]). Type **rpar** [enter] and select **cosygpsw,** click on '**copy all**'. Type **eda** [enter] or click on the Acqu tab and change **sw** in F1 and F2 and **o1p** and **o2p** to the values recorded in step 1 (**o2p** should be set to the same value obtained for **o1p**). Make sure the appropriate solvent is selected and click the little blue test tube icon to update the probe parameters. Click the 'Spectrum' tab when you are finished. If you know your sample is not concentrated, you may want to increase the number of scans, **ns** in the **eda** window.

3. Turn **off** the sample spinning (either by pushing the button on the BSMS console – top left – or in the shim panel of the bsms display). Touch up **z** and **z2**. Type **rga** [enter]. Type **zg** [enter].

4. Type **xfb** [enter] to process the 2-D data any time during the acquisition. You can stop your acquisition before it finishes if you have already resolved your cross peaks of interest. Just type **halt** and **xfb** to process the latest scans. If the ppm scale is off, type **edp** [enter] and change the **offset** to the downfield limit of your sw (=o1p + ½ SW). NOTE: Due to a bug, you may have to go in and change the **offset** value multiple times. Baseline corrections often help the appearance of the spectrum, type **abs1** [enter] **abs2** [enter]. It is often beneficial for T1 noise reduction to select the 'Symmetrize/Tilt' option under the Processing section for COSY type spectra. If you right mouse click on the traces on the left and top of your spectrum and select external projection, you can select your optimized proton spectrum to be the spectrum you see on both sides of the 2-D display.