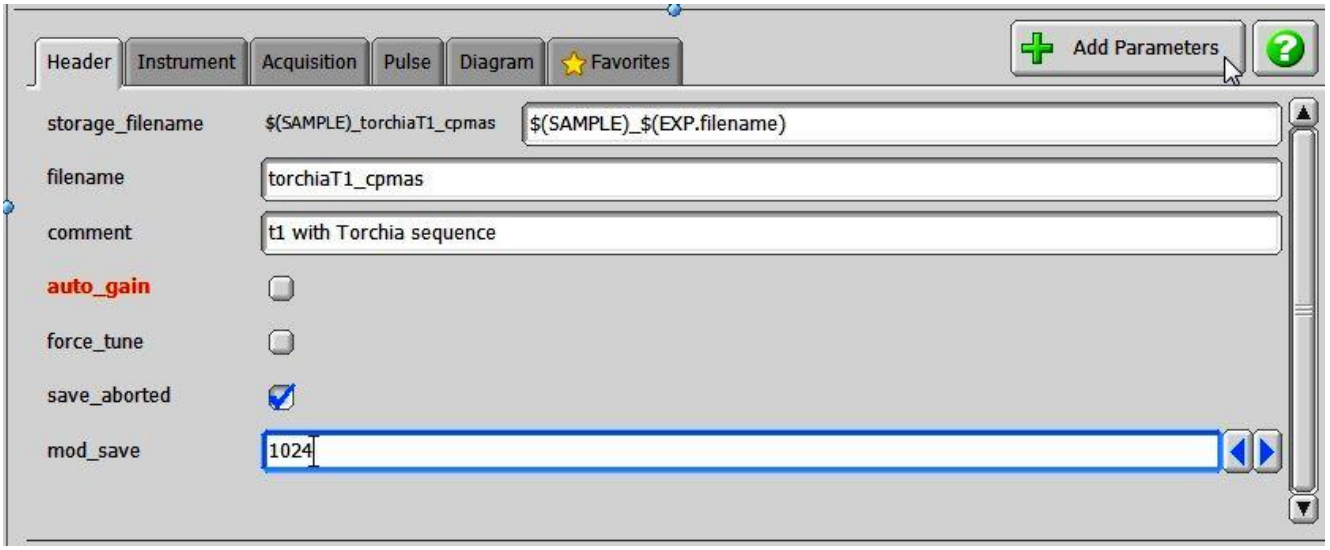
Do You Wanna See 2D Results on the Way ? Delta Has "outer_scans" Function !

Array experiments such as relaxation measurements and two-dimensional (multi-dimensional) experiments may be time-consuming. Instead of being disappointed after long acquisition with insufficient S/N, for example, check the results on the way using Delta's fabulous functions, `outer_scans` *and* `mod_save` *!*

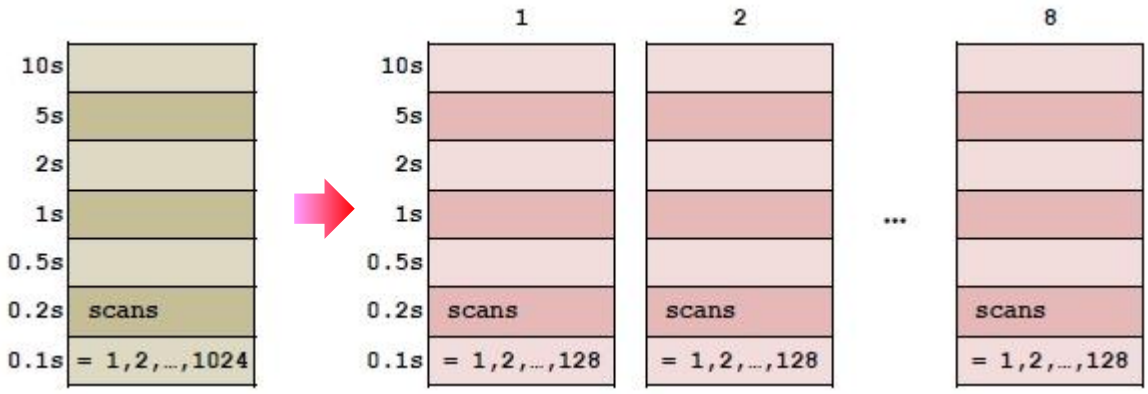
As you may know, `mod_save` function saves the data on the way every preset numbers of scans. This function can be added when you click "Add Parameters" in Header tab of Job tab in Delta's spectrometer control window. For the example of `scans` to be 8192, when you input 1024 as `mod_save`, Delta saves every 1024 scan data (after 1024 scans, after 2048 scans, ...) as copy files, stored in the data server in the case of Delta version 5.



Let's see a relaxation experiment with `7` values of `interval = 0.1, 0.2, 0.5, 1, 2, 5, 10(s)` and `scans` of `1024` for each `interval`. When `repetition_time` is `10(s)`, the total acquisition time may amount to `(10.1 + 10.2 + 10.5 + 11 + 12 + 15 + 20)(s) × 1024 = 25` hours. As a result, you may find whether the result is proper or not only after `25` hours using the usual procedure. However, if you use `outer_scans` and `mod_save` described below, you can check the data on the way, for example, every few hours.

JEOL RESONANCE

In the usual procedure for the above example, data are at first acquired by 1024 scans for interval=0.1(s) and at last acquired by 1024 scans for interval=10(s). Note that the same total scans can be acquired as 128 scans for interval=0.1(s), 128 scans for interval=0.2(s), … , and 128 scans for interval=10(s), and by "externally scanning" such a set by 8 times. Thereby, the result after every set of the acquisition is conducted for all the values of interval and so can be used for checking the data on the way.



To carry out the "external scan", you can add the parameter "outer_scans" in Acquisition tab. In the above example, input 8 as outer_scans as well as 128 as scans. To save the data after every set of the acquisition, you can use mod_save. Here, please be cautious in setting the value of mod_save as the number of one set acquisition, namely, the multiple of 7 (0.1,0.2,…,10s) by 128 scans equal to 896.