

# How to use S700X for AC measurements

1. If the program crashes, FIND stepper zero to reset the axis
  
2. CENTER sample
  
3. SQUID monitor → CHECK that the SQUID is non saturated
  - (a) If the SQUID is saturated, CHECK the input voltage on the coils,  $A_0 = 0.1V$  is not supposed to saturate the SQUID
  - (b) CHECK DC cable connection
  - (c) If the SQUID is still saturated, change the range. The most sensitive range is range 0.
  - (d) If this does not work, unmount grey cable (a residual flux might be trapped in the SQUID)
  
4. DAQ configure → set different frequencies (take into account the centering)
  
5. System configure → save with file name
  
6. AC compensation
  
7. AC measurement

TO DO :

1. Try autocenter on
2. Try to add frequencies in AC measurement, instead of doing it in the DAQ configure menu
3. Go to some temperature (around 10K to have a large magnetic momentum (Curie's law)). Compensate for a large number of frequencies, for a given, fixed, SQUID range. Get results for susceptibility. the real part should be flat (paramagnetic) and the imaginary part should be zero. Rotate the phase (post process) to vanish the imaginary part, and rescale to superimpose. This phase rotation should depend only on the instrument.