# *Exercise 4: Sensitivity and Computational Cost*

Sensitivity is defined as the inverse of the minimum amplitude of the signal required to achieve a given false alarm and true positive rate. While the computational cost is proportional to the number of data points required to achieve a given sensitivity. Of course, for fainter signals we will need more data points to achieve the desired sensitivity whilst for higher amplitudes we will need less data points.

Then, you will have to inject different signals, varying its amplitude and number of data points and arrive to their ROC curves. As you may have noticed, this process will be very computationally expensive and then we will use the small Computer Cluster of the lab.

## Guidance

1. Using Condor, plot qualitatively sensitivity versus computational cost. Use DAG if you want to inject signals and then analyse it.

2. What is the relation between sensitivity and computational cost? Why?
   *Hint: remember properties of Gaussian noise from exercise 1.*