***Short Term***

**Existing Muon Analysis Interface**

* Bug fix to ensure a constant screen position for the plot window (this is urgent)
* Errors associated with fitting parameters to appear on panel during fitting
* Batch Fitting (setup list of runs from within the interface) (currently being developed)
* Simultaneous fitting of multiple data sets and groups to a single model with shared and individual parameters, with an easy to understand interface
* rotating reference frame transform

**Separation of algorithms for Python scripting**

* Examine the analysis workflow, testing and documenting muon analysis algorithms

**Enhanced Plot Spectrum**

* Tiled display with each plot displayed in a separate layer. Global or individual scaling of plots should be possible

***Medium Term***

**Interface for Frequency Domain Analysis**

* Fast Fourier transform (with window functions optimised for muon data)
* Maximum entropy (part working (?) - legacy Fortran code)

**Interface developed around the ‘plotasymmetrybylogvalue’ algorithm for RF and ALC analysis.**

* Enable automatic point addition on run completion
* Peak fitting and analysis with a flexible method for background fitting and subtraction
* Interface mock up by Arturs Bekasovs presented and discussed in a meeting held 21/10/13. Development part of the muon JRA (finishing early 2016).

Both interfaces should be developed separately from the existing Muon Analysis interface, but with a view to combining functionality once code has been properly tested.

***Long Term (1-3 years)***

**Combining simulation and analysis (theme of the new muon JRA)**

* Dipole field calculations (code existing at Oxford University, Blundell group)
* Quantum (James Lord author of original program)
* DFT (package with a Python interface being developed in Parma by De Renzi as part of JRA)

We’d hope to develop a couple examples within the period of the JRA, initially to execute the simulation and return results within Mantid but later to create a link with curve fitting.

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