



# A Muon JRA in FP7 – WP20





# Tasks in the JRA ...



## 2. Technologies for high-field instruments

- Fast-timing detectors for high transverse field applications
- Design and simulation of a high field instrument for PSI
- Performance assessment of high-field operation at ISIS



GAPD detector prototype  
for the PSI  
High Field spectrometer



ISIS High Field  
spectrometer

*Jose Rodriguez (PSI) and Philip King (ISIS) will be giving updates of the work*



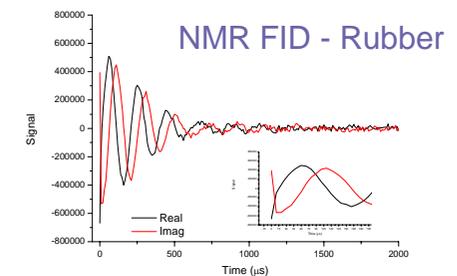
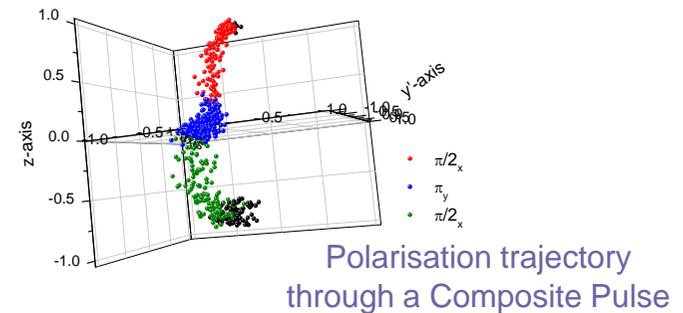
### 3. Developing technologies for $\mu$ SR at high pressures

- Development of a solid-sample pressure cell
  - Simulations of stopping ranges and S/N have started.
  - PDRA appointed for the project
  - Cell development will start as planned late 2010
  
- Development of gas-phase sample cell with RF coils
  - Development of the cell planned to start late 2010



## 4. Novel resonance techniques and simulation codes for analysis

- RF $\mu$ SR experiments using NMR style pulsed techniques
- Development of an in-situ NMR spectrometer
- Simulation codes to support analysis
  - Postponed, but on track to start late 2010



*Nigel Clayden (UEA) will be giving an update of the work*

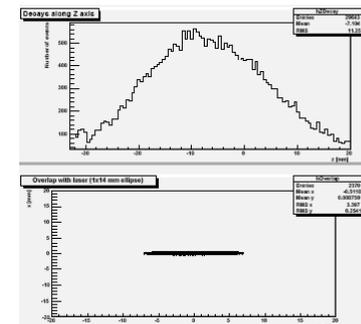


## 5. Muon beamline control and modelling

- Development of techniques for beamline diagnostics
- Instrument simulation code to allow full instrument modelling
- Development of the Nexus file format
  - work towards developing a common format between PSI and ISIS
  - extend existing format to capture beamline parameters



CCD camera – high field beam profile imaging



*musrSim* –

muon stopping profile  
in a H<sub>2</sub> cell

coincidence with  
laser excitation

(Pavel Bakule – ISIS)

*Jose Rodriguez (PSI) and James Lord (ISIS) will be giving updates of the work*



## A broad collaboration

### Partners:

- University of Parma, Italy
- University of Babes-Bolyai, Romania
- PSI Continuous Muon Facility, Switzerland
- ISIS Pulsed Muon Facility, UK (Coordinator)

### Collaborators:

- Dubna, Russia
- University of East Anglia, UK
- RIKEN-RAL, Japan/UK
- University of British Columbia, Canada



## Muon JRA – Agenda for satellite meeting, Tuesday 11<sup>th</sup> May, Barcelona

9:00 *Review of the JRA*

*A programme of short presentations (each ~10 min including discussion) to review the JRA*

1. Overview of the JRA – Tasks and Deliverables SPC

*Task 20.2: Technologies for High Field Instruments:*

2. The high-time resolution detector for the 10 Tesla  $\mu$ SR instrument JR
3. Designing a high Longitudinal Field instrument for ISIS PJCK

*Task 20.4: Novel resonance techniques and simulation codes for complex experiments:*

4. RF $\mu$ SR experiments using NMR style pulse sequences NIC

*Task 20.5: Muon beamline control and modelling:*

5. Geant4 simulations of the high field  $\mu$ SR instrument JR
6. Measuring the muon beam in a magnetic field JSL

10:30 *Discussion*

*considering progress of Tasks, post-doc workers, future meetings, reporting, budget, etc*

11: 00 *Meeting close*