



3rd International Workshop on Quasi-Free Scattering with Radioactive-Ion Beams: QFS-RB 17

24th – 26th of July 2017

1st Circular

The QFS-RB 17 Workshop will be hosted by the University of York. The Workshop will take place at the King's Manor, in the centre of the historic city of York in the UK.

<https://www.york.ac.uk/physics/news/events/groups/nuclear-physics/qfs-workshop/>

It is a follow up Workshop of the ones in Trento, Italy (1st QFS-RB 2008) and Azores (2nd QFS-RB 2013).

Scope:

The development of new radioactive ion beam facilities providing intermediate to high energy beams (100 MeV/u - 1 GeV/u) combined with new experimental setups and techniques allow for kinematically complete measurements with high resolution and efficiency. First experimental results from such setups are now available and many new experimental programs are currently being developed in several experimental facilities including the [R3B](#) (Reactions with Relativistic Radioactive Beams) and [EXL](#) (EXotic nuclei studied in Light-ion induced reactions) at the [FAIR](#) facility at GSI Darmstadt, Germany, as well as at the [RIBF](#) facility at RIKEN, and the [FRIB](#) in the US. Knockout reactions at quasi-free scattering kinematic conditions in inverse kinematics with hadron targets are used to investigate nuclear properties of unstable short-lived nuclei.

In parallel, in the last decade a wealth of experimental results has been published on short-range correlations using quasi-free scattering reactions with electron probes on stable targets at [JLAB](#) in the US. These studies have revealed interesting new phenomena that could be further enhanced in isospin asymmetric nuclei.

In order to extract reliable information from the experimental data the interplay between the experiment and the reaction and structure theory has to be addressed in detail. From the reaction side one needs a tight control on the reaction formalism, a proper assessment of all excitation mechanisms and a reliable description of all the pair dynamical interactions. From the structure point of view, the role of *ab initio* versus shell model calculations, non-locality effects, and the role of higher excited states in the continuum must be explored and described.

The Workshop aims to trigger discussions on recent experimental and theoretical results and future plans. An important task is also to illuminate how the physics aspects can be disentangled and to identify the observables and the kinematical conditions allowing to probe more accurately the dynamical and structural aspects.

To achieve this goal, the Workshop is bringing together theory and experiment experts in the field of quasi-free scattering to discuss the latest developments in the field. Following the tradition of the successful 2013 QFS Workshop, it also invites experts in the short-range correlations community to exchange ideas and initiate collaborations.

The topics of the Workshop include the following:

- Quasi-free scattering reactions with hadrons and electrons as probes
- Short-range correlations
- Reaction theory of quasi-free scattering reactions
- Spectroscopic factors
- Pair interactions
- Structure effects
- Polarization observables
- Quasi-free scattering with radioactive beams: status and future prospects.



Location: The meeting will be held at King's Manor in the centre of York, YO1 7EP, UK

Accommodation:

Please make your own arrangements in hotels near the venue (city centre).

Also, for those that do not mind a 10-15 min bus ride, there is more affordable accommodation on the University of York campus (a bit outside the city centre):

<http://www.yorkconferences.com/secure/york-conferences/bed-and-breakfast.aspx>

Registration: please follow the Eventbrite link found towards the end in the following webpage:

<https://www.york.ac.uk/physics/news/events/groups/nuclear-physics/qfs-workshop/>

The registration for the event is free, cost for the Workshop dinner will be requested at a later stage.

Air Travel: The largest nearby international airport is the Manchester Airport, which is connected directly by train (~2h journey) to York city centre. Several other smaller airports nearby include the Leeds Bradford Airport, which can be reached preferably by car in about 50 min drive and the Doncaster Sheffield Airport (about 1½h drive or public transportation).

Social events:

Dinner date: TBA

Organizers:

Stefanos Paschalis (University of York), Chair

Thomas Aumman (Technical University Darmstadt, GSI), Chair

Carlos Bertulani (Texas A&M University-Commerce)

Raquel Crespo (IST/CFNUL, University of Lisbon)

Dolores Cortina Gil (University of Santiago de Compostela)

Sponsors: The meeting will be sponsored by HIC for FAIR, University of York, STFC and IoP.