

2023

Proposal: g-2 Collaboration Week



UNIVERSITY OF
LIVERPOOL



Proposal to Host g-2 Collaboration Week

The Physics Department at the University of Liverpool proposes to host the Summer 2023 g-2 meeting. Liverpool is an historic, friendly city with relatively easy access within the UK and to a major airport. Costs and accommodation are generally low (especially given the current exchange rate) for the UK. Food and entertainment are plentiful and geared towards the student budget.

Offering/Timetable

We provisionally propose the week Monday 24th July to Friday 28th July.

24 th July	13:00-14:00	Registration.
	14:00-18:00	Meeting
	19:00-20:30	Reception
25 th July	09:00-12:00	Meeting
	14:00-17:00	Meeting
	17:30-19:30	IB
26 th July	Social Events	
27 th July	9:00-12:00	Meeting
	14:00-18:00	Meeting
	19:30-22:00	Conference Meal
28 st July	9:00-12:00	Meeting



Connectivity – Getting Here

Air: Airlines operate flights to Liverpool from UK and European cities. There are no direct flights from London but there are train connections. Manchester airport is 1 hour from Liverpool and there is a direct train link. US carriers, American Airlines and Delta serve Manchester. Typically flight times are approximately 12 hours from New York (with stopover), 18 hours from Los Angeles (with stopover).

Rail: There are numerous services to Liverpool from London and Manchester. See www.nationalrail.co.uk. To obtain the cheapest fares it is best to book a ticket in advance. The Manchester – Liverpool line is the oldest in the world, and remains quite basic!

Car/Taxi: From London to Liverpool the journey time is approximately 5 hours (although it can take longer). Check on the validity of your license. Insurance is mandatory. Remember driving in UK is on the left! Car rental can be expensive in UK. From Manchester airport, travel time about 1 hour, you can pre-book a taxi (Black cabs on arrival are expensive so best to reserve a ride.)

Accommodation

There is a wide range of accommodation available. Typically these can range from budget hotels (\$60 per night) to over \$200 per night. We will block book three categories:

- Budget (e.g. Campanile)
- Mid-Range (e.g. Liner)
- Business (Novotel, Hilton)

Conference Events and Facilities



Reception: [Victoria Buildings](#) historical University building

Conference Meal: This will be catered at a local venue, price included in the meeting fee.

Meeting: We are proposing to open the meeting same location as our recent Muon Workshop ([The Spine](#)), close to the Department and a Novotel. On subsequent days on we will host the meeting in our University lecture theatres and/or the Historic [Liverpool Medical Society](#) which we also use for our meetings. Lunches and tea-breaks will be catered.

Cost : A conference fee of \$250 is proposed, excluding accommodation. We are trying to reduce this and will aim to subsidise students.

Liverpool City

Liverpool is a city that has held UNESCO World Heritage Status and was awarded European City of Culture (2008). In the 20th century it was the home of the Beatles, and the distinctive Mersey Sound poets and the world's first overhead electric railway. Its 24+ museums cover the history and culture of Liverpool, and include the plain quirky Williamson Tunnels and Port Sunlight Village, one of the Victorian villages that was built to house factory workers



Cultural and Historical Museums

This partial list covers some of the most important Museums and Galleries and places that we hope you can visit. These cover the history of the port city, through the Imperial era all the way to modern Liverpool which has reinvented itself as a vibrant University city, drawing students from all round the world.

Some of the below are extremely important in understanding Britain's history



Speke Hall, Liverpool

[International Museum of Slavery](#)

[Museum of Liverpool](#)

[Speke Hall](#) (Elizabethan Manor)

[Tate Gallery](#) (In the Albert Dock)

[Walker Art Gallery](#)

[World Museum](#)

[Williamson Tunnels](#)

[Western Approaches HQ Museum](#) (Battle of the Atlantic)

[Philharmonic Hall](#)

[Beatles Museum/Tour](#)

[Chinatown](#) (UK's oldest)

[Port Sunlight Village](#)

[Liverpool Waterfront](#) (Cunard/White Star Buildings)

[Albert Docks](#)

[Georgian Quarter](#) (Close to the University)

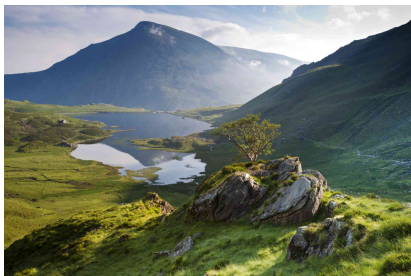
[Town Hall](#)

[Liverpool Railway History](#) include Lime Street Station (which you will arrive at by rail), and Edge Hill one of the first railway stations in the world.

Social Events



The Roscoe Head, one of the stops on the tour.



Mt. Snowdon, N. Wales

We propose a choice of two activities:

A historical walking tour of Liverpool with refreshments, including “Ferry on the Mersey”. Starting with University we explore the Georgian Quarter, moving down to the centre of town, and then ending the waterfront and Albert docks. Time will be made for architecture (including Liverpool's famous pubs buildings) and places of note. We will split the tour in small groups and guides will be provided.

Snowdonia National Park A coach tour to the magnificence of North Wales including a visit to Conwy Castle.

If neither of these suit you why not pick one or more of the museums or locations above and take your own time?

University of Liverpool Physics and Theoretical Physics

Founded as a college in 1881, it gained its [Royal Charter](#) in 1903 with the ability to award degrees, and is also known to be one of the six '[red brick](#)' civic universities, the first to be referred to as The Original Red Brick. It comprises three faculties organised into 35 departments and schools. It is a founding member of the [Russell Group](#).

The Department of Physics has supported

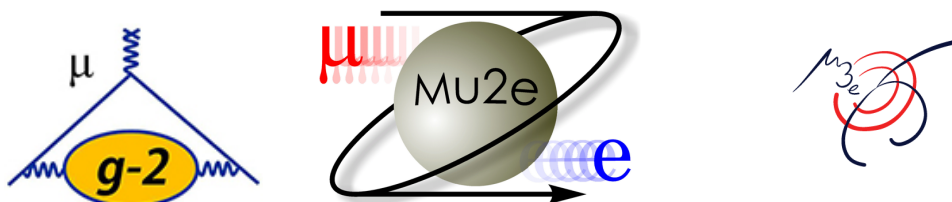
- [Oliver Lodge](#) who one year before Marconi demonstrated transmission of electromagnetic waves/signals
- [Charles Barkla](#) (awarded the Nobel Prize in Physics in 1917) for discovering the electromagnetic properties of X-rays.
- [Sir James Chadwick](#) (awarded the Nobel Prize in Physics in 1935) for discovering neutrons. He was a member of the [Tube Alloys](#) directorate and headed the British Mission on the Manhattan Project.
- [Joseph Rotblat](#) (awarded the Nobel Peace Prize in 1995) for his efforts with nuclear disarmament.
- [Martin Perl](#) (1995 awarded the Nobel prize) joined University of Liverpool to initiate our Atom Interferometry Work which led to MAGIS.
- [Erwin Gabathuler](#), research director of CERN

Historically it supported a 37" Cyclotron in the 1930's and then built the [156" synchro-cyclotron](#) which was in service in the 1950's and 1960's and was a pre-cursor to CERN's first accelerator, the SC. The SC performed the 1957 5 parts per mil measurement of muon g-2, (Cassels et al) and in 1958 was able to demonstrate C-parity violation (Holt et al.)



156" Liverpool Synchro-Cyclotron

We today are active at CERN, FNAL, PSI, JPARC, SURF and Gran Sasso and an experimental programme including neutrinos (DUNE, SBND, T2K, HyperK), dark matter (LZ, DarkSide-20k, CTA), LHC (ATLAS, LHCb, FASER) and are the UK's largest laboratory working on Muons (g-2, mu2e, mu3e, muEDM, MuonE) as well as quantum experiments (Magis@FNAL) and technology R&D.



Theoretical Physics is part of the Maths Department. Its two research clusters have 17 academic staff, working mostly in particle physics, with a direct involvement in Liverpool's precision muon physics programme. The theory group play an important role in the Muon g-2 Theory Initiative