



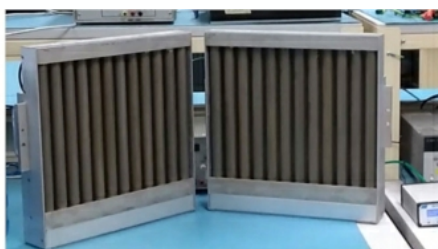
ILLnews letter

JULY 2022

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NEXT PROPOSAL DEADLINE: 7 SEPTEMBER

HIGHLIGHTS AND SCIENCE NEWS



Airbus Avionics & the Institut Laue-Langevin: working together for safety in the air

Single-event effects (SEEs), which are mainly induced by neutron particles, can be responsible for soft errors. As the functionality of avionic systems increases, aircrafts are embarking more and more advanced microprocessor and semiconductor memory devices. The SEE qualification for components to be used in aircraft equipment relies on the characterisation of cross-sections for high-energy neutrons (already well known) and thermal neutrons. The only way to estimate the real thermal neutron fluxes inside an aircraft is to perform direct measurements during flights at cruising altitude. In 2021 the ILL became part of the Airbus Avionics project: it provided thermal neutron detectors for on-board use, while sharing its technical expertise with thermal neutrons detectors. The design, development and implementation of highly advanced neutron detectors is at the heart of the ILL's activity, as all forty of its cutting-edge scientific instruments require detectors with unique technical specifications. [Read more](#)



One particle on two paths: Quantum physics is right

The double-slit experiment is the most famous and probably the most important experiment in quantum physics: individual particles are shot at a wall with two openings, behind which a detector measures where the particles arrive. This shows that the particles do not move along a very specific path, as is known from classical objects, but along several paths simultaneously: each individual particle passes through both the left and the right opening. Normally, however, this can only be proven by carrying out the experiment over and over again and evaluating the results of many particle detections at the end. With the help of neutrons at the TU Wien instrument S18 located at the ILL, it has been possible to develop a new variant of such a two-way interference experiment that can correct this flaw: A single neutron is measured at a specific position - and due to the sophisticated measurement set up, this single measurement proves already that the particle moved along two different paths at the same time. [Read more](#)

[MORE HIGHLIGHTS HERE !](#)

[A SELECTION OF RECENT ILL PUBLICATIONS](#)

NEWS FOR USERS & CALL FOR PROPOSALS

Proposal round and deadline for applications

The ILL user programme will be **back in full swing in 2023**, with three cycles scheduled before the summer break.

The experiments to be scheduled during the first semester of 2023 will be selected during the **panel meetings on 7-8 November 2022**.

Proposals from non-member country proposers will only be guaranteed a chance of acceptance if they are part of a collaboration with at least two-thirds of the proposers coming from one of the Associate or Scientific Member [Countries of the ILL](#). **Please note that ILL scientists listed as co-proposers are not taken into account in the calculation (unless for pure ILL proposals)**.

Furthermore the ILL Director retains the right to limit the number of proposals including scientists from non-members countries. Failure to satisfy the rule will not necessarily block a proposal submission: a small amount of beamtime (less than 5% of the total available) will be granted to proposals not complying with this rule, on the basis of scientific excellence. [Read more](#)

Access Policy to the ILL beamtime: the two thirds rule is back!

At the request of the ILL Associates, the ILL had to temporarily suspend the 2/3 rule and block the submission of proposals from non member countries.

It has now been decided to reestablish the 2/3 rule as from the next proposal round in September. As a reminder, the rule is the following:

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Backlog accumulated before the long shutdown

Because of the specific conditions created by the pandemic over recent years, we have an unusually large backlog on several instruments. We have decided to cancel all the backlog accumulated before the current long shutdown. Please re-submit your experiment at the next round if you are concerned by this

New for soft matter and biology users: an extensive library of hydrogenous and deuterated lipids from natural extracts is available for neutron scattering experiments from the L-Lab at the ILL. You can find the list at <http://www.ill.eu/L-Lab>. If the compound you are looking for is not in the list, please contact lipids@ill.fr

40 Tesla / 2K cryomagnet available to ILL Users:

A pulsed horizontal field cryomagnet developed by LNCMI Toulouse and the ILL is now available to ILL Users. Experiments with this magnet can be performed on IN22 in collaboration with LNCMI who provides and operates the power supply. If you wish to submit a proposal and use this equipment, please contact Fabienne DUC (fabienne.duc@lncmi.cnrs.fr) (LNCMI, Toulouse) before the final submission. The equipment can only be used with support from LNCMI, therefore a LNCMI person will be included in the proposal and experimental team. You should select the environment code 'Cryomagnet, Pulsed Horizontal Field < 40 T' if you want to use this option.

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