

CARIBU: PAC Issues First Experiments

Robert V. F. Janssens

PAC: General Principles

- Because CARIBU is not yet operational, the experience is not yet available to provide well-informed answers to all the questions that have been raised about how the low-energy CARIBU facility will operate (PAC, beam delivery, scheduling etc.). Clearly, there is value in learning more about CARIBU before a system gets formalized for experiments with low-energy beams.

There are, however, some **guiding principles** that will always apply:

- (1) It is the mission of ATLAS to enable the **best possible science**, irrespective of the energy or the instrumentation being used.
- (2) **ATLAS is a User facility, and the CARIBU low-energy beam area is part of the facility.**

Hence, the present rules that govern the operation of ATLAS apply to experiments in this new area as well.

- (3) Once experience is gained, the **Users** of the low-energy beams at CARIBU **will be involved** in formalizing the approval process for their experiments.

→ **We want a system that works for everyone**



PAC: Function and Membership

Function:

- The ATLAS PAC reviews proposals for experiments at ATLAS and recommends allocation of the available beam time on the basis of their scientific merit. The PAC also advises the Scientific Director on all issues related to ATLAS (new initiatives, strategic plan, ..) and to the User program at the facility.
- The PAC meets on average twice a year (next meeting: 4/22-23, 50 proposals) .
- PAC appointments are made by the ATLAS Scientific Director in consultation with:
ANL & ANL/PHY management, ATLAS Users Executive Committee

Membership:

Birger Back	Argonne National Laboratory	
Bogdan Fornal	Niewodniczanski Institute of Nuclear Physics, Poland	
Sean Freeman	University of Manchester	
John Hardy	Texas A&M University	← PAC Chair
Daryl Hartley	United States Naval Academy	← Chair User Executive Committee
Walter Loveland	Oregon State University	
Witek Nazarewicz	The University of Tennessee, Knoxville	
Hendrik Schatz	Michigan State University	

World-leading experts, provide both national and international prospective



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- This PAC has expertise in most areas of active research at ATLAS (nuclear structure, reactions & dynamics, nuclear astrophysics and fundamental interactions)
- Thus, this PAC has expertise for many of the experiments in the low-energy area BUT it maybe lacking expertise is the applied fields.
- The lack of expertise is NOT specific to applied research at CARIBU: it happens for a small fraction of other proposals as well (irradiations for material science or medicine, AMS for oceanography, etc.). Our approach so far: send the proposals out for review to external experts at ANL, U. Chicago or elsewhere and the reviews are considered by the PAC.
- This may well work for CARIBU low-energy experiments as well, at least at the beginning while we gain experience. If experience shows that a new PAC member is needed, one will be appointed with input of the User community.



Scheduling issues:

Question: How will priorities be set? What has highest priority (re-accelerated vs low-energy etc.).

→ We need experience before we can answer this type of question AND we need input from the community as well.

→ Some general guidelines:

- DOE/ONP specifies performance measures that its Users facilities have to meet. ATLAS will have to negotiate with ONP how to get proper credit for CARIBU low-energy hours.
- The split between hours with stable and radioactive beams from ATLAS will be governed by the science, hence by the PAC decisions. Practical considerations such as the time needed for new CARIBU developments, the time required to setup new equipment for etc. will enter into consideration as well.
- Developments will be required for reaccelerated as well as for low-energy CARIBU beams.
- Issues on number of hours to approve have ALWAYS taken flexibility into account. This will not change and experience only can help dictate how detailed a request the PAC should receive for experiments with low-energy CARIBU beams.
- Running experiments always have the highest priority at ATLAS. Because beam time with acceleration is expensive, it will receive the highest priority. This statement holds for priority-1 experiments only. CARIBU experiments with low-energy beams will be next in line; i.e., will have higher priority than development of new equipment or maintenance activities. Only experience will tell whether situations are likely to occur where priority-2 experiments requiring ATLAS would compete for attention with CARIBU low-energy experiments. Before deciding how to handle such situations, input from ONP and the ATLAS Users community will be required.



Tuning issues:

Question: Who will tune the beams to CPT / Decay stations? Will this be separate from ATLAS tuning?

- At the present time, and until we have a clearer picture from DOE/ONP about the funding for manpower, the beams will be tuned by G. Savard and his group. As other users (especially outside users) begin to use the facility, training for operating the gas catcher and tuning components of the beamline will be necessary in order for the ATLAS source group to assist in beamline tuning.
- A request for a new accelerator physicist position is under discussion with ONP. This physicist would at the onset focus on CARIBU development, with his responsibilities being expanded further as time goes on.
- We need the support of the community to make the case.
- We want your input, help and understanding as we start bringing CARIBU into operation.

