

# **Recommendations**

**of the Programme Advisory Committee  
for Particle Physics**

**17th meeting, 15-16 April 2002**

**Tim Hallman**

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**June 6, 2002, Dubna**

# Preparation of JINR's Programme of Particle and Relativistic Nuclear Physics Research for 2003-2009.

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- The Programme Advisory Committee for Particle Physics notes with interest the information presented by Vice-Director A. Sissakian and directors of JINR Laboratories on the preparation of the Programme of JINR's Scientific Research and Development for the next 7 years (2003-2009) in the field of high-energy physics.
- The PAC supports the main directions of the draft plan for the Programme of JINR's Scientific Research and Development, and looks forward to a report on the final plan at its next meeting.
- The PAC is concerned that the long-range plan across the Programme of Particle and Nuclear Physics at JINR must be coherent since it involves several Laboratories. It recommends that the JINR Directorate develop a consolidated coherent proposal for presentation at the next PAC meeting.

# JINR Educational Programme

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- The PAC is gratified to learn of the prospective plan for the organization, maintenance, and development of the university-type education process at JINR, presented by UC Deputy Director T. Strizh. It strongly supports this activity as a means to encourage and invest in young scientists and students who are essential for the success of the scientific programme in particle physics.



# JINR's networking and computing infrastructure

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- The PAC notes the report of LIT Director I. Puzynin, and is gratified to learn of the progress being made on JINR's networking and computing infrastructure.



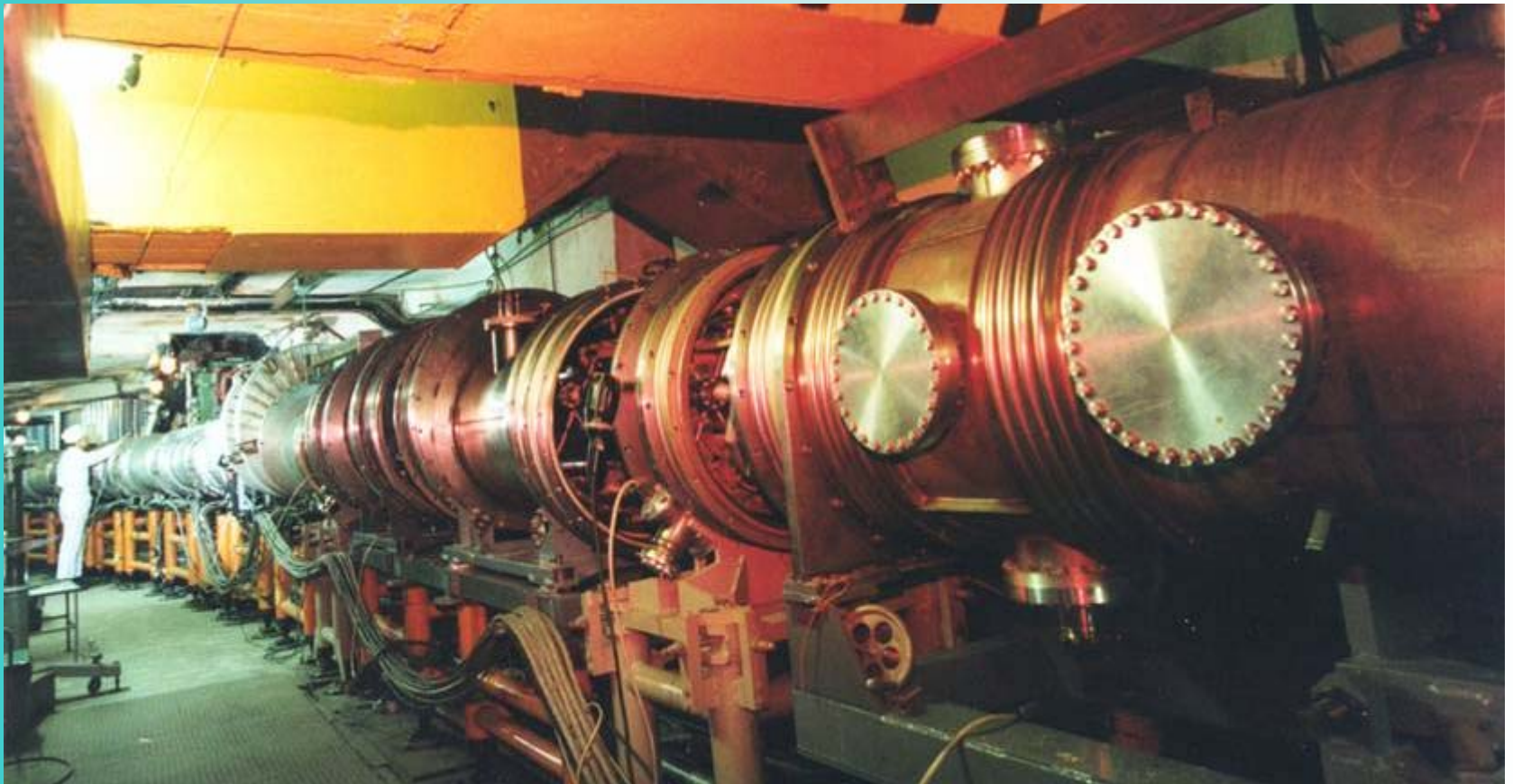
It strongly recommends that the JINR Directorate provide the necessary support to allow for continued improvement of this infrastructure, since adequate capability in this area is essential for the future success of the scientific programme in particle physics.

## **Recommendation on the JINR basic facilities**

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- The PAC notes with interest the report by JINR Chief Engineer I. Meshkov on the status of JINR's basic facilities and activities in accelerator physics and engineering.**
- It is gratified to learn that the running time for the Nuclotron was increased significantly last year. Further development to improve beam quality and especially to provide beams of polarized deuterons and secondary beams of polarized protons within the coming year is a task of the highest priority.**
- The PAC notes the extensive and high-quality research programmes in accelerator physics and engineering under way at JINR. The recognized expertise of the Institute's accelerator specialists allows for the JINR research groups to be successfully involved in international collaborations and projects.**

- The PAC also notes that the manpower and resources for realization of these programmes seem to be thinly spread between the Laboratories and their research activities, and recommends that project teams be established to concentrate effort on the main goals of the development of the JINR basic facilities.



# Recommendations on the long-term programme of physics studies at the Nuclotron

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- The PAC notes with interest the report concerning the long-term plan of physics research at the Nuclotron, presented by VBLHE Director A. Malakhov. The PAC continues to be concerned that the main physics drivers for the Nuclotron need to be identified along with a corresponding plan for a limited number of first-line experimental facilities to achieve this programme.
- The PAC recommends that the JINR Directorate provide adequate support for scientists working at the Nuclotron to encourage active scientific participation by young scientists in this programme.

## Recommendations on new projects

The PAC recommends approval of the projects:

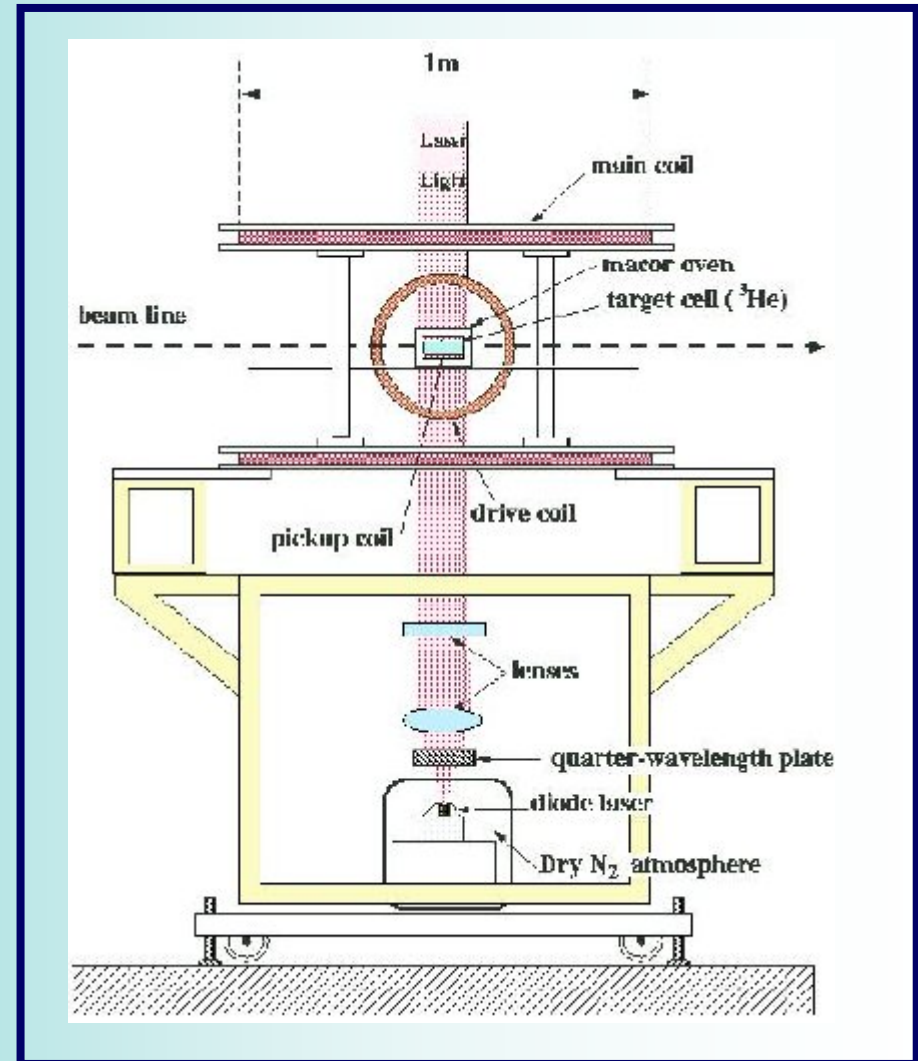
- **“Experimental studies of NN-scattering with polarized particles at the VdG accelerator of Charles University”** (project NN-interactions) with first priority until the end of 2005, provided dedicated financial support is given by the Czech Republic.
- **“Spin effects of meson production at polarized nuclei”** (project PIKASO) with first priority until the end of 2005.
- **“Astrophysical studies on space satellites”** (Experiment TUS) with first priority until the end of 2005. The PAC requests to have a report concerning simulation progress for this project at its next meeting.



# Recommendations on new projects (continuation)

The PAC recommends approval of the projects:

- **“Probing short-range spin structure of the deuteron with polarized deuteron beam and polarized  $^3\text{He}$  target” (project PHe3) with first priority until the end of 2005.**





## Recommendations for ongoing experiments

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### The Programme Advisory Committee

- acknowledges the valuable contribution of the JINR group in preparation of the dipole magnet iron yoke manufacturing process, notes the successful startup of its production at the factory;
- notes the contribution of the JINR group to the ALICE muon spectrometer software development as well as to muon chamber test beam studies;
- notes the successful production and tests of the prototype time-expansion drift chamber for the TRD detector in close collaboration with German research centers;
- acknowledges the active participation of the JINR team in the preparation of The ALICE Physics Performance Report.

**The Programme Advisory Committee recommends continuation of JINR's participation in this important project.**

The PAC takes note of the report on JINR's participation in the **ATLAS** project and notes with satisfaction that the construction of the Hadron Scintillation and **Liquid Argon Calorimeters** is nearing completion according to schedule. The mass production of **the muon chambers** and of elements of the Internal Tracker was started.



The PAC recommends that the JINR Directorate provide adequate technical and financial support to this activity.

**The Programme Advisory Committee recommends continuation of JINR's participation in this important project.**



The PAC takes note of the report on JINR's participation in the **CMS** project. The CMS collaboration has entered the first year of the assembly and installation period. Taking into account the importance of the timely production and delivery

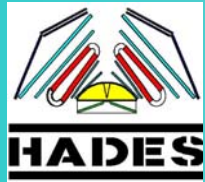
to CERN in 2002 of the components under responsibility of the JINR-CMS group, the PAC recommends that the JINR Directorate provide adequate technical and financial support to this activity and for the subsequent preparation for the scientific programme.

**The Programme Advisory Committee recommends continuation of JINR's participation in this important project.**

Concerning all the above mentioned activities, the PAC wishes to stress that computing for LHC experiments is becoming a most important issue and in general should be considered a basic facility for particle physics research at JINR.

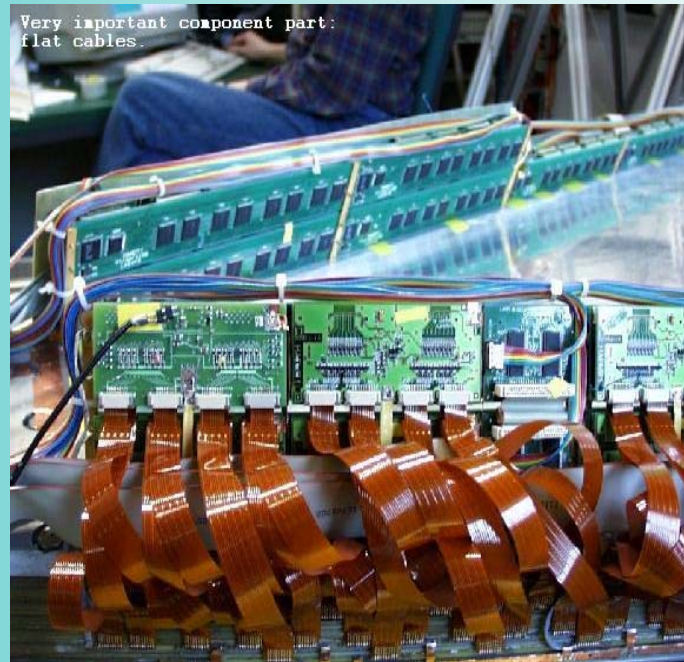
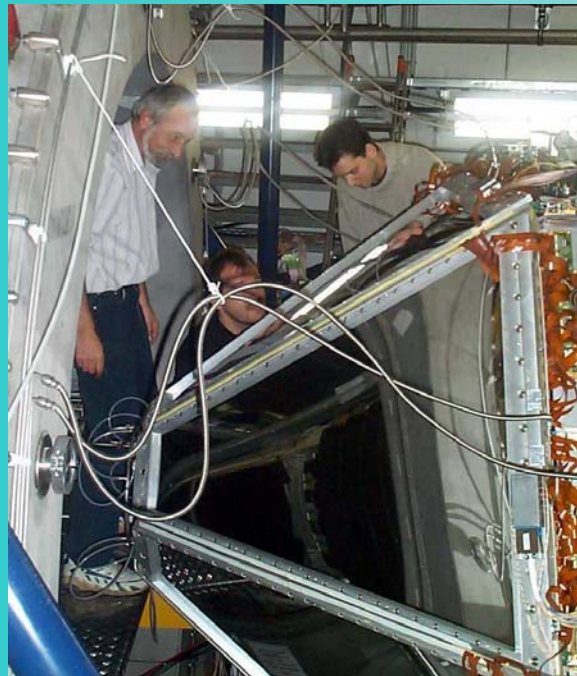
# Recommendations on the experiments approved for completion in 2002

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The PAC takes note of the report on JINR's participation in the **HADES** experiment.

The PAC appreciates the significant contribution made by the JINR group to this project: the development and production of high-resolution inner drift chambers, the production of front-end electronics and the development of data analysis software.

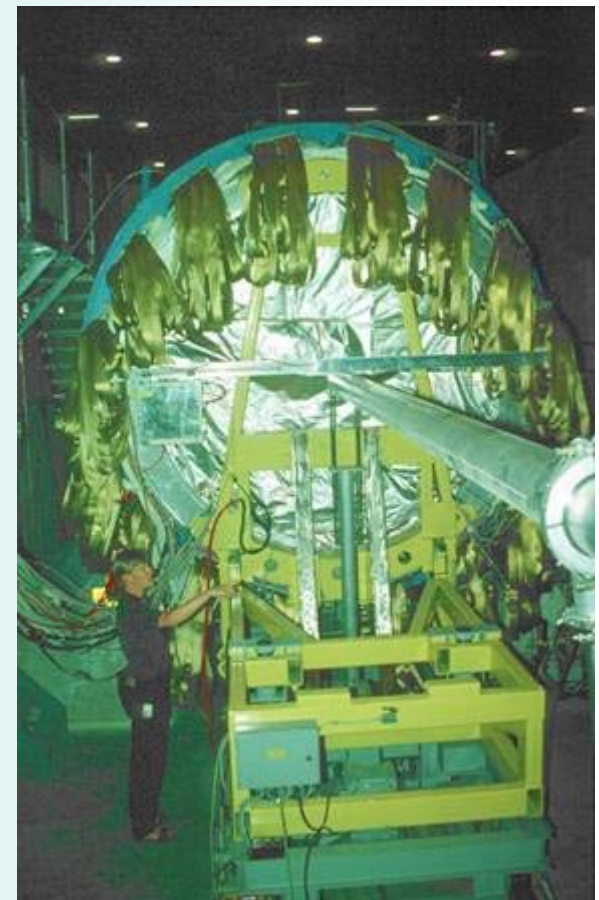


**The PAC recommends extension of the HADES activity with first priority until the end of 2005.**

## Recommendations on the experiments approved for completion in 2002 (continuation)

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The PAC takes note of the report on LHE's participation in the project **CERES/NA45** and **recommends extension of this activity with first priority until the end of 2005**, on the condition that CERN continues the NA45 programme.



# **Next meeting of the PAC**

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**The next meeting of the PAC for Particle Physics will take place on 11-12 November 2002.**

**The following questions are proposed to be included in the agenda:**

- JINR's programme of particle physics research for the years 2003-2009;**
- reports and recommendations on the experiments to be completed in 2002;**
- consideration of new projects proposed by the Laboratories for 2003;**
- priority-setting in the JINR particle physics experimental programme.**

