

PHOS prototype @ BRAHMS

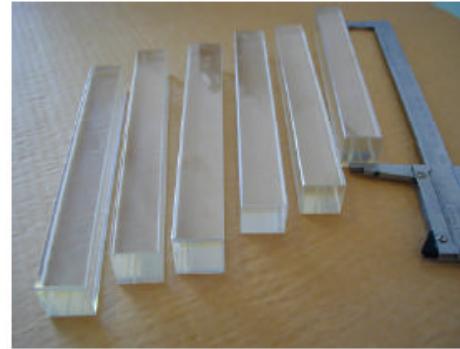
- Test of the PHOS 256-channel prototype in a realistic environment
- High-pt physics at RHIC
 - Complementary to BRAHMS' charged pions
 - Complementary to PHENIX, less background
 - Acceptance for pions at 2 m: $1.5 \text{ GeV}/c < p_t < 25 \text{ GeV}/c$
- Schedule
 - Shipping to BNL: November 2002
 - Data Taking: 2003 (one Norwegian PhD thesis)
- Open questions
 - CPV (Charged Particle Veto) and the cooling system are operated by our Russian colleagues. We need a few of them at BNL for some time for installation and initial operation. The Russians (and the French) have signaled interest in PHOS at RHIC, but we (PHOS) did not discuss money and manpower issues yet.

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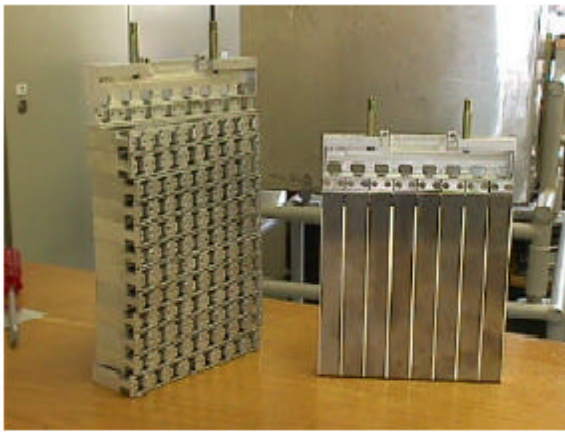
- PHOS 256-channel prototype
 - Crystals
 - Lead tungstate crystals (PWO), crystal size: 22?22?180 mm³
 - Depth in radiation length: 20
 - Operating temperature: - 25 oC
 - Frontend electronics
 - Avalanche Photo Diode (APD) readout
 - Preamp, Shaper, ADC (CAMAC/VME)
 - Charged Particle Veto counter – CPV
 - Cooling system
- Groups involved (INTAS project 692)
 - NIS participants
 - RRC "Kurchatov Institute", Moscow
 - RFNC VNIIEF, Sarov
 - SSC-IHEP, Protvino
 - INTAS/CERN participants
 - University of Oslo, Oslo (Project coordinator B. Skaali)
 - University of Bergen, Bergen
 - SUBATECH, Nantes

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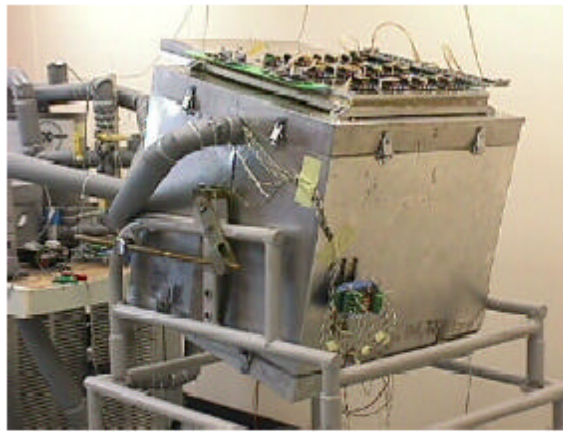
- Lead tungstate crystals (PWO)



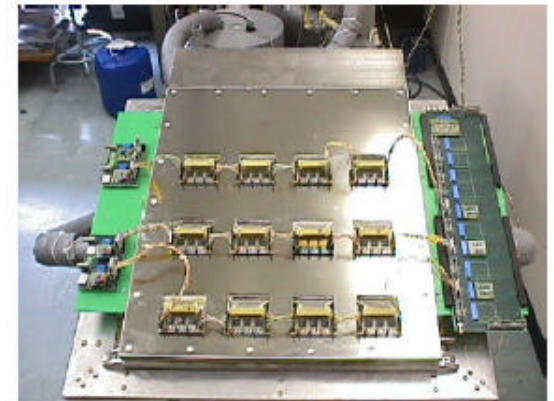
Crystals



The strip unit



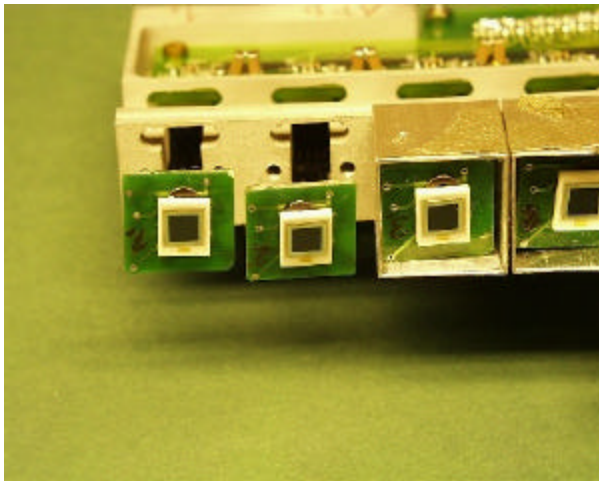
The prototype with the CPV-detector mounted on top of it.



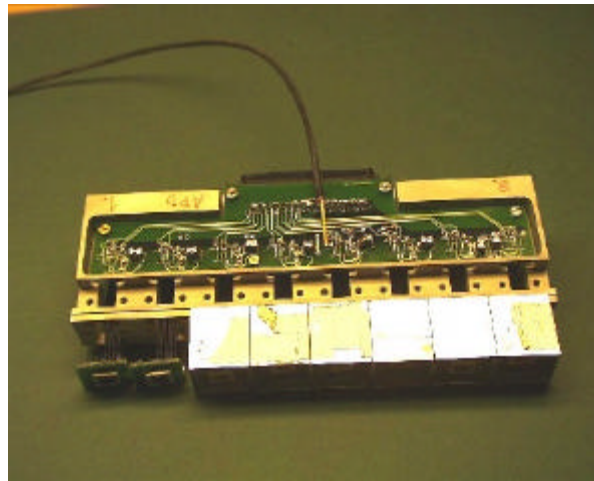
CPV

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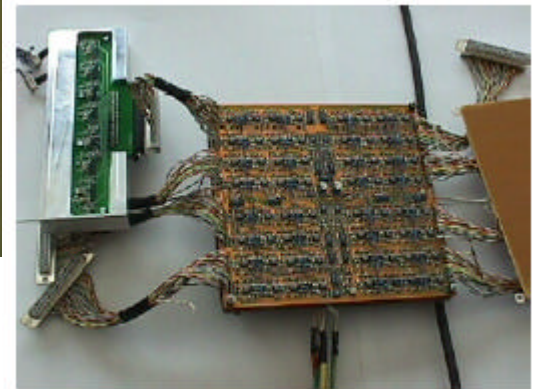
- Frontend electronics



APD and preamp

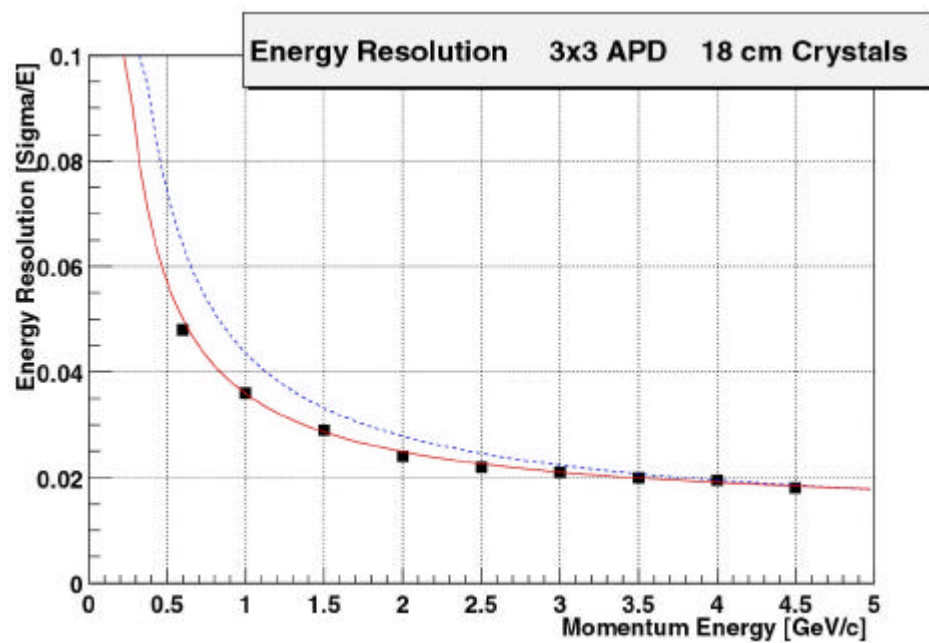


Shaper and ADC



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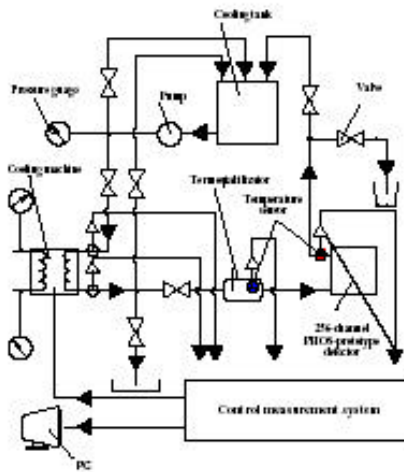
- Beamtest of the PHOS 256-channel prototype
 - Energy resolution (blue curve: TDR specs.)



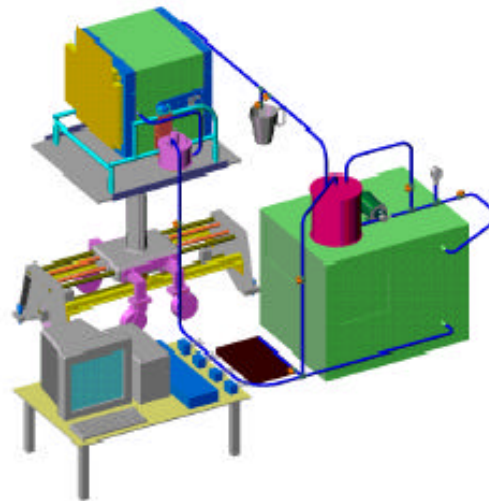
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- Cooling system

PHOS - COLLING/THERMOSTABILIZATION SYSTEM OF THE 256-CHANNEL PROTOTYPE



Scheme of the cooling /thermostabilization system



General layout of the cooling/thermostabilization system

