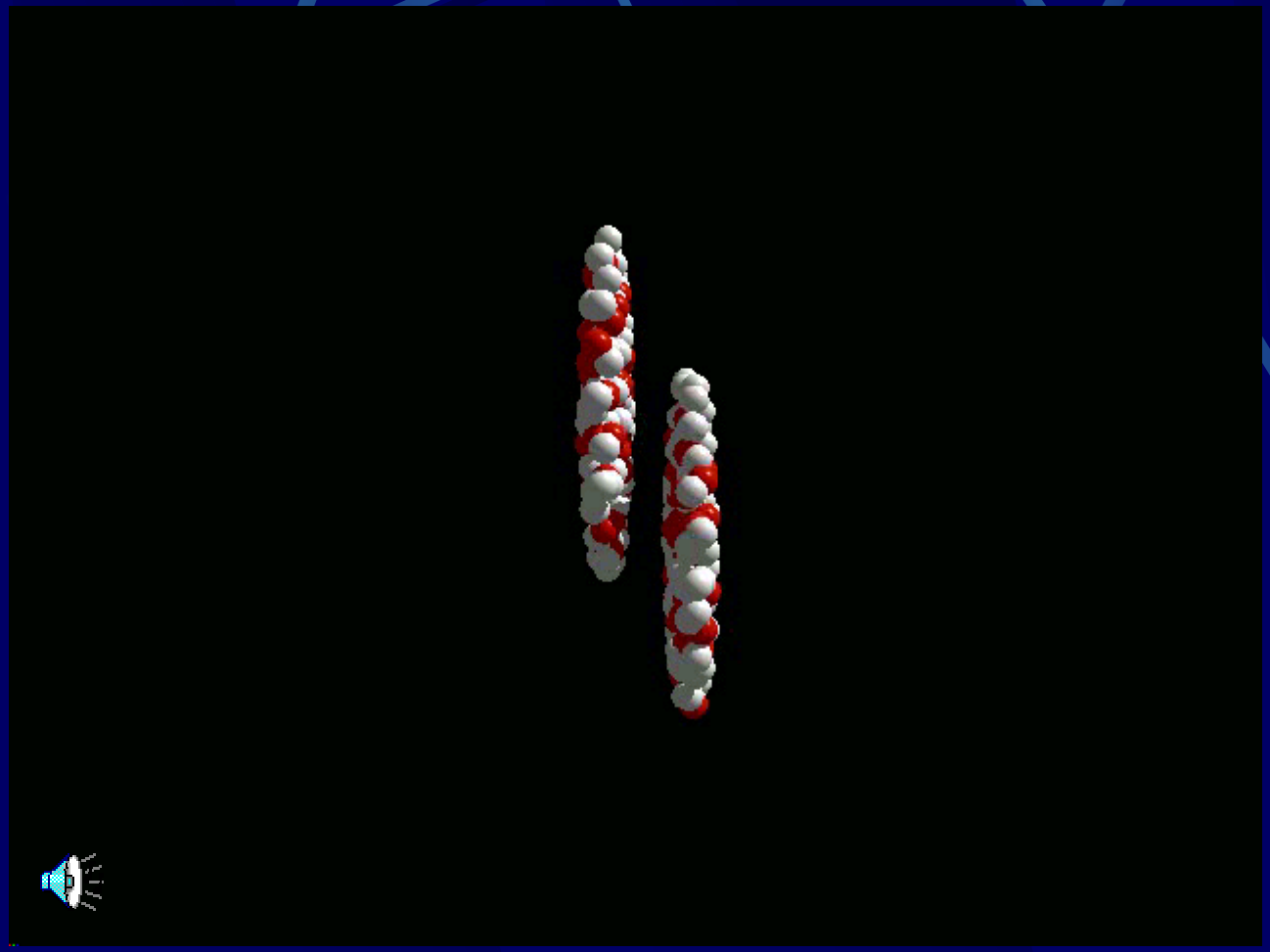
Actualités PHENIX
(mes photos de vacances)

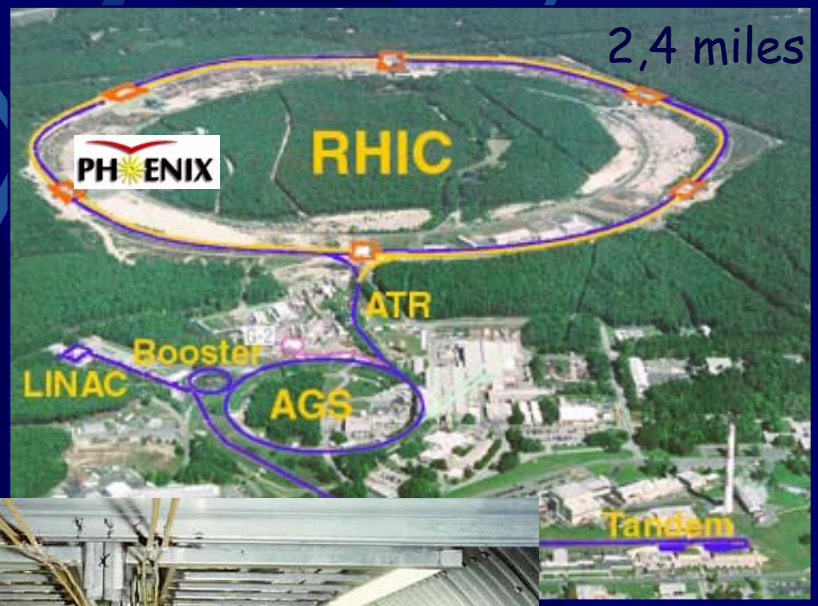
- L'électronique (beaucoup)
- La physique (pas trop)
- L'informatique (très peu)
- Le calendrier (tout le temps)
- Les gens (trop)

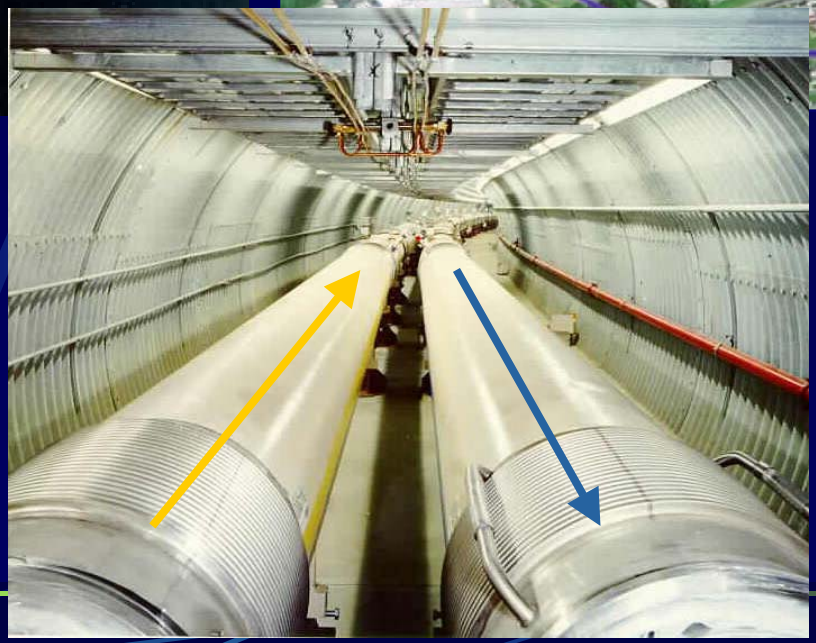
Le but physique



- Voir le Plasma de Quark et de Gluons
- Dans des collisions d'ions lourds
- Comme NA50
- X 10 densité d'énergie

L'accélérateur (RHIC)





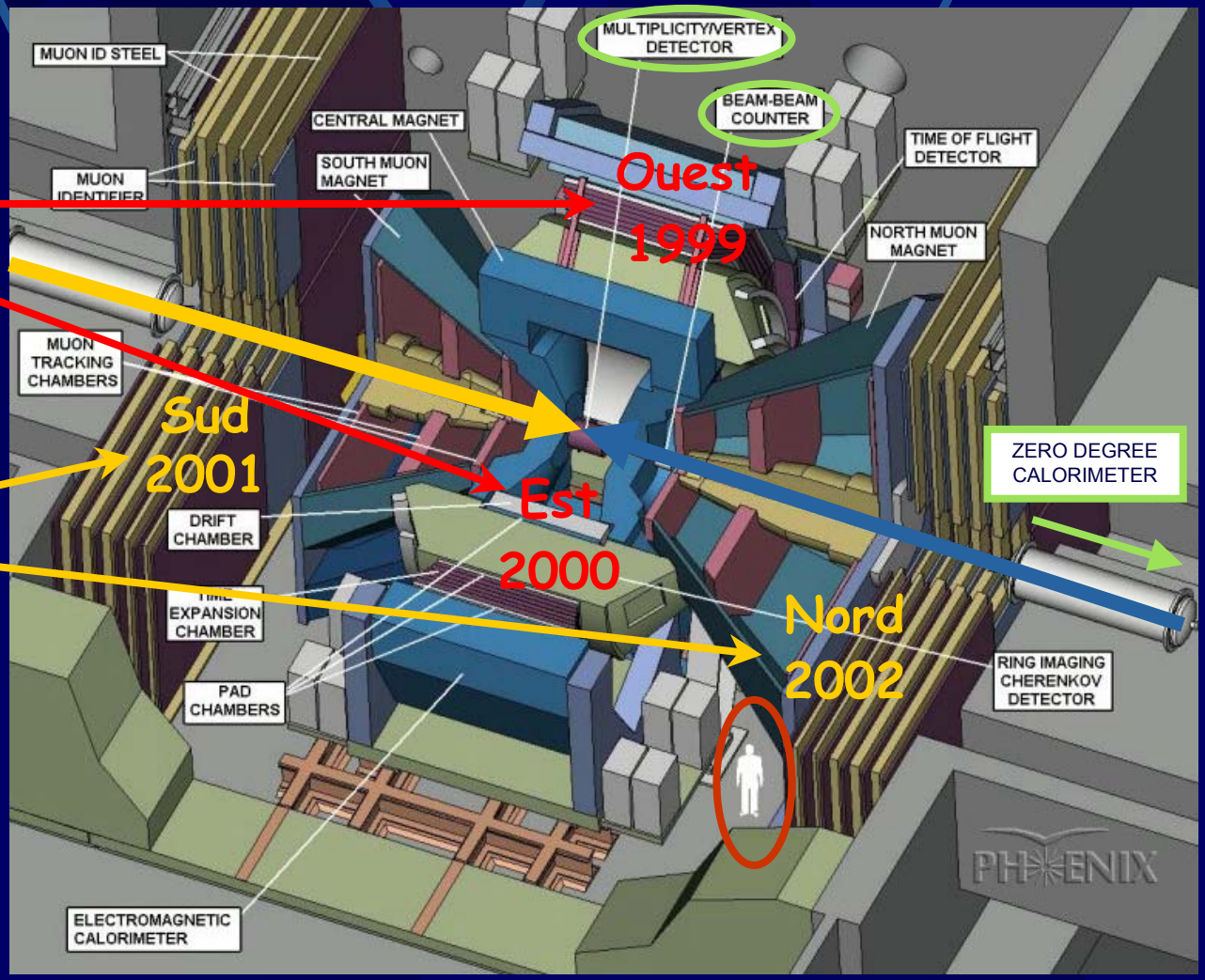
- p+p
  - 500 GeV
  - 2×10^{32} cm^{-2} s^{-1}
- or+or
  - 200 GeV/nucléon
  - 2×10^{26} cm^{-2} s^{-1}

Le détecteur (PHENIX)

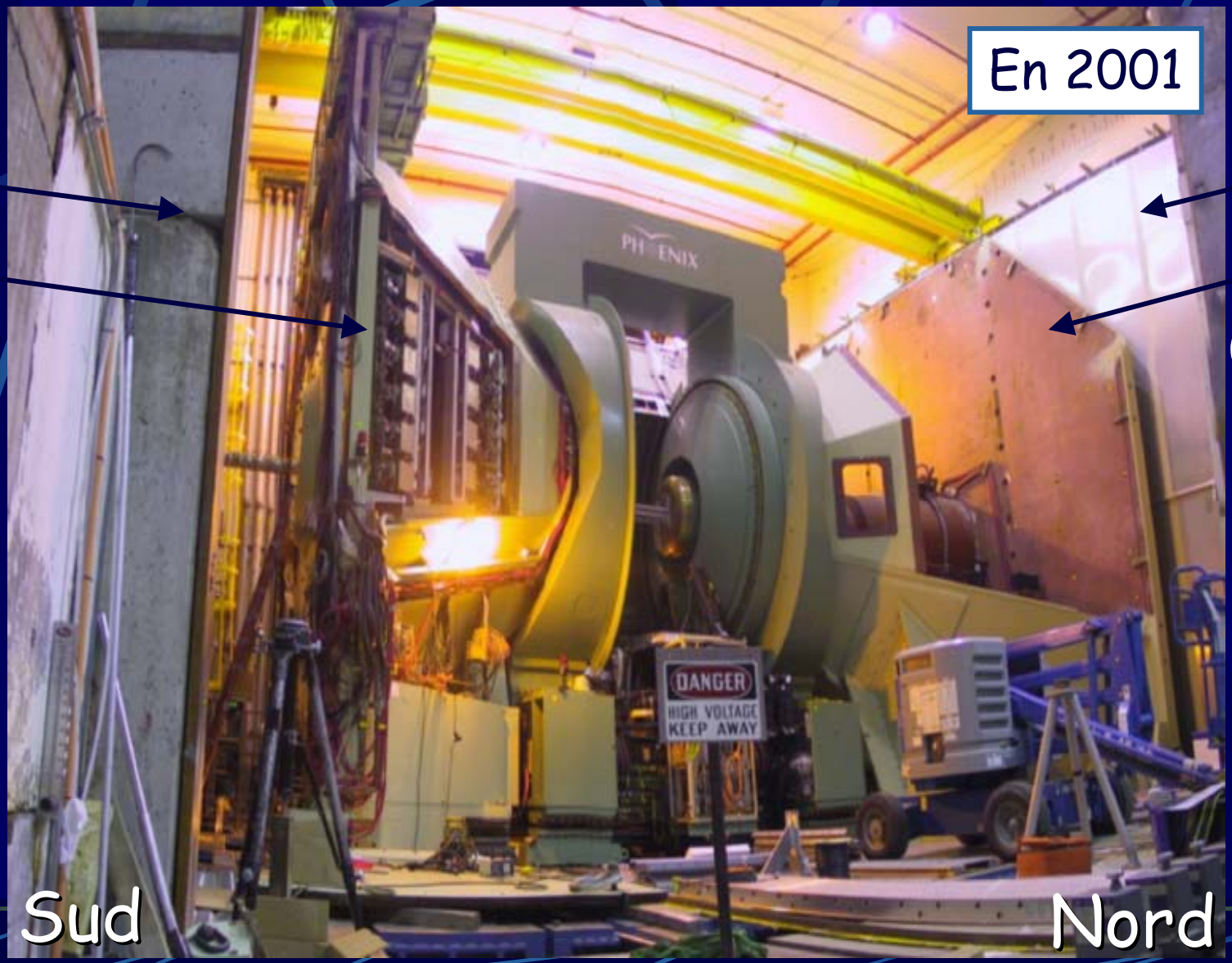
Deux spectro centraux (protons, π, K électrons)

Deux spectro à muons vers l'avant (deux NA50)

+ Trois détecteurs globaux

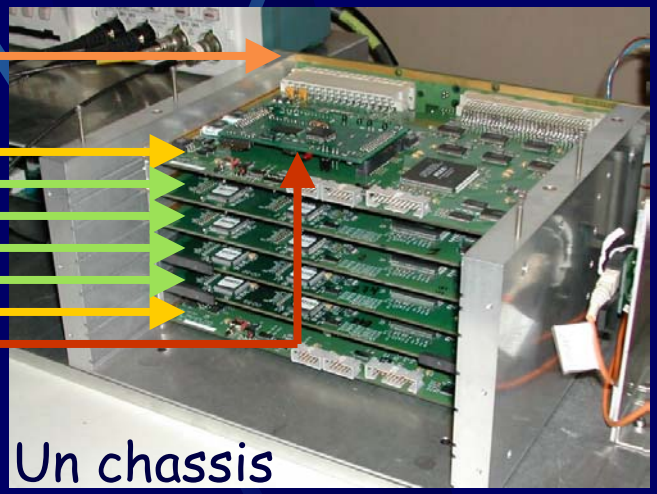


En vrai…


En 2001
MuId
MuTr
(équipé)
MuId
MuTr
(tout nu)
PHENIX
DANGER
HIGH VOLTAGE
KEEP AWAY
Sud
Nord

L'électronique

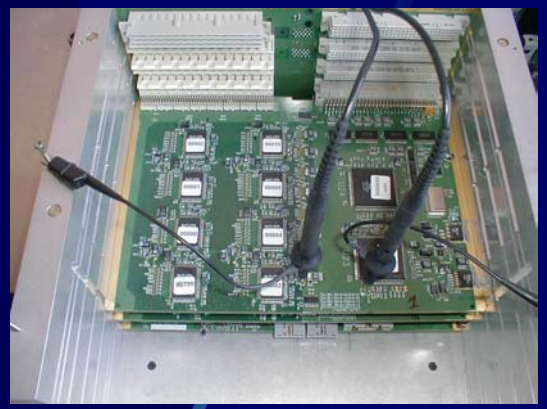
- Le LLR a pris en charge la production de l'électronique du bras nord (Alain, Franck, …)
  - 128 back planes
  - 216 controlers
  - 480 crocs (64 voies)
  - 250 arcnets (Corée) + 50

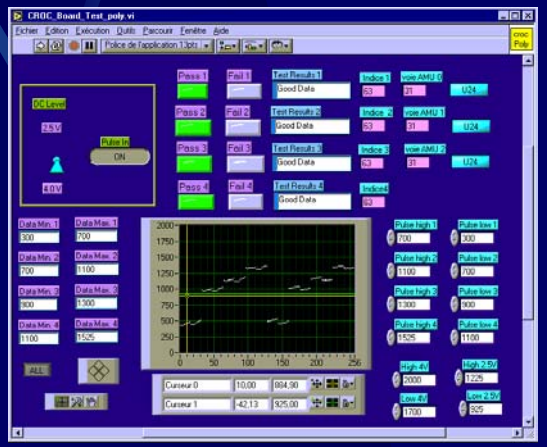


- Planning
  - Printemps 2001 : recherche entreprises
  - Été 2001 : marchés publiques…
  - Automne-Hiver 2001 : collection de cartes

Tests de niveau 1 @ LLR (04-2002A)

Février 2002





…test intégré sur carte PCI… (Franck&Simon)

Tests de niveau 2 @ BNL

Réparation du bras sud…

Avril 2002

- Changement de quelques cartes défectueuses
  - 20 CROCs, 8 CNTLs, 7 BPs, 2 ArcNet…
  - Ramenées pour investigation/réparation
- Réduction du bruit électronique
- Vérification que tout marche avant fermeture…
- Responsabilité de l'électronique nord + sud (Olivier)

Avril 2002

the Bulletin

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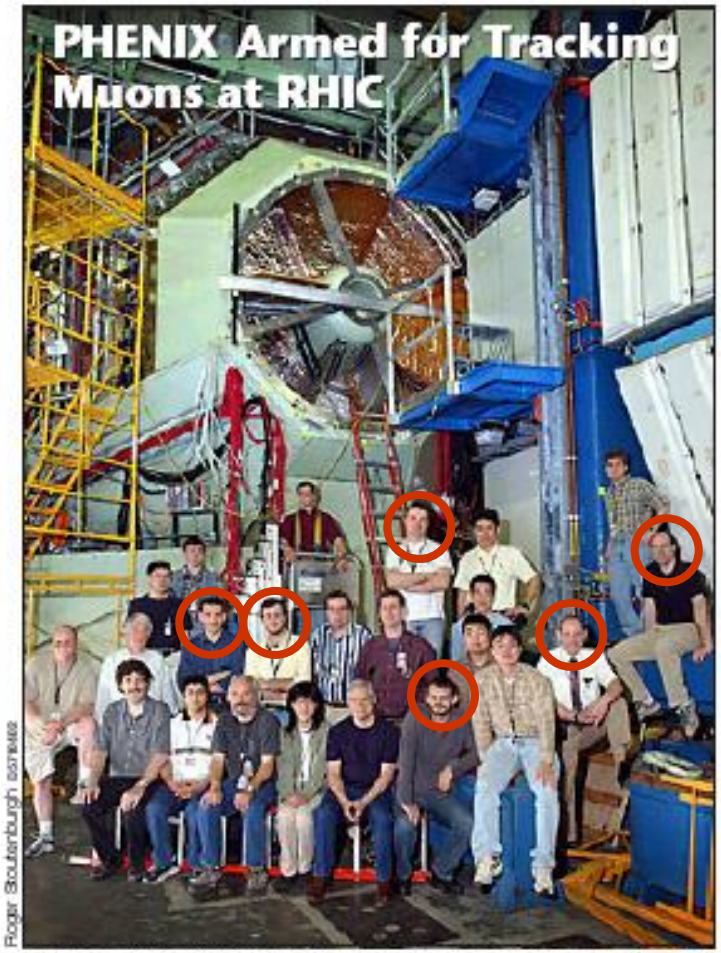

PHENIX Armed for Tracking Muons at RHIC

Roger Stoutenburgh

Members of the PHENIX muon-arm team are gathered in front of the muon tracking detector.

SNO Storms Ramparts Of Solar Neutrino Puzzle

On Saturday, April 19, scientists from Canada, the United States and the United Kingdom announced the results of a unique new measurement of the total number of all known neutrino types reaching the Earth from the Sun.

Using data entirely from the Sudbury Neutrino Observatory (SNO) in Canada, the SNO team, which includes a BNL contingent, is also able to determine that the observed number of electron neutrinos, the type produced by the Sun, is only a fraction of the total number.

Said Project Director Art McDonald of Queen's University, Canada, "These new results show in a clear, simple and accurate way that solar neutrinos change their type before reaching the Earth. The total number of neutrinos we observe is also in excellent agreement with calculations of the nuclear reactions powering the Sun. The SNO team is excited because these measurements enable neutrino properties such as mass to be

tainty for fundamental theories of elementary particles."

Neutrinos are particles with no electric charge and very little mass, known to exist in three types related to three different charged particles — the electron, the muon, and the tau. The Sun emits only electron-neutrinos, which are created in the thermonuclear reactions in the solar core. Previous experiments found fewer electron-neutrinos than suggested by calculations based on how the Sun burns — the famous "solar neutrino puzzle" revealed in the early 1970s when BNL scientist Ray Davis's pioneering research in a South Dakota gold mine first documented the missing electron neutrinos.

"With all of BNL's history in studying solar neutrinos, started by Ray's work, then continued by the international GALLEX collaboration in Italy, it's been particularly satisfying to be part of the SNO experiment," said Richard Hahn, who heads the Solar Neutrino Group in BNL's

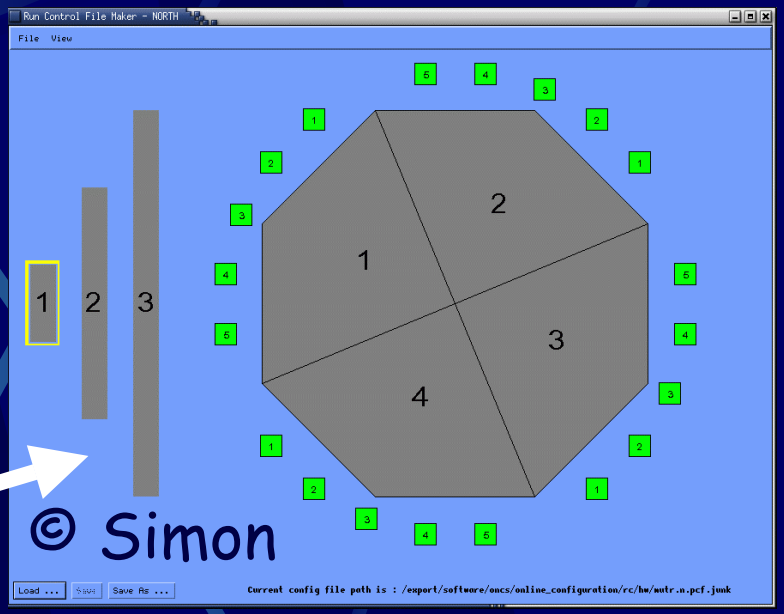
April 30 Symposium Celebrates RHIC Spin Physics, the RIKEN BNL Collaboration

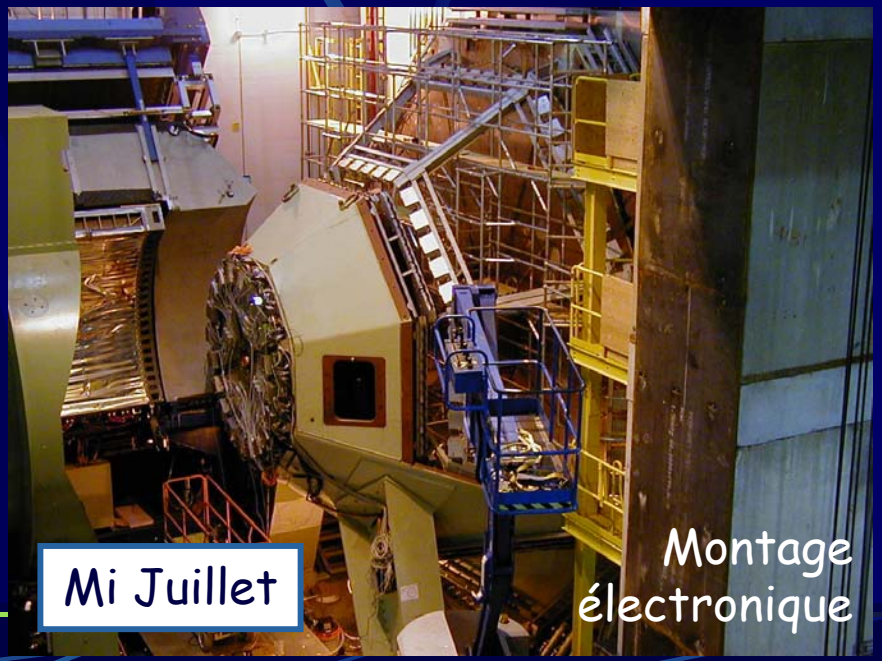
On Tuesday, April 30, the successful collisions of polarized protons at the world's highest energy ever, and the start of the spin-physics program at the Relativistic Heavy Ion Collider (RHIC) will be celebrated when Japan's Minister of Education & Science, Atsuko Toyama; Member of the Japanese House of Councilors, Akito Arima; and President of the Japanese Institute of Physical & Chemical Research known as RIKEN, Shun-ichi Kobayashi, visit BNL.

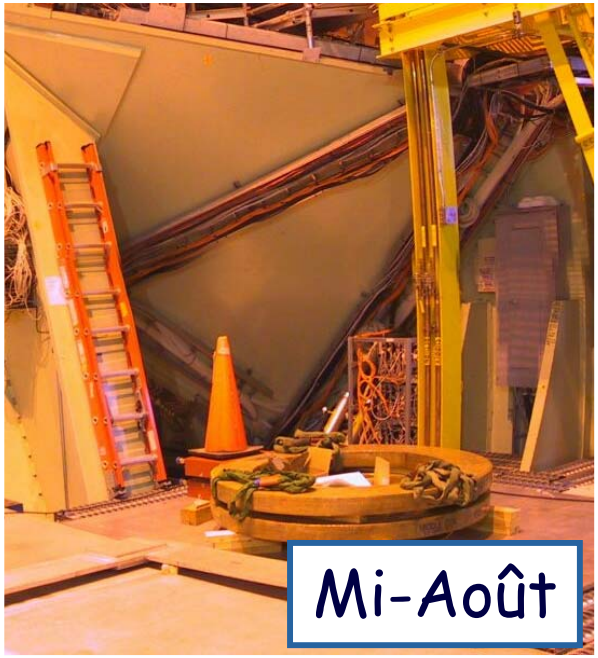
One of the day's highlights will be the signing of a memorandum of understanding to extend the existing spin-physics collaboration for another five years. This collaboration includes the RIKEN BNL Research Center (RBRC) at BNL. Established with an initial $2-

Installation - mise en route

- Câbler/lire l'électronique
- Adapter/améliorer le soft





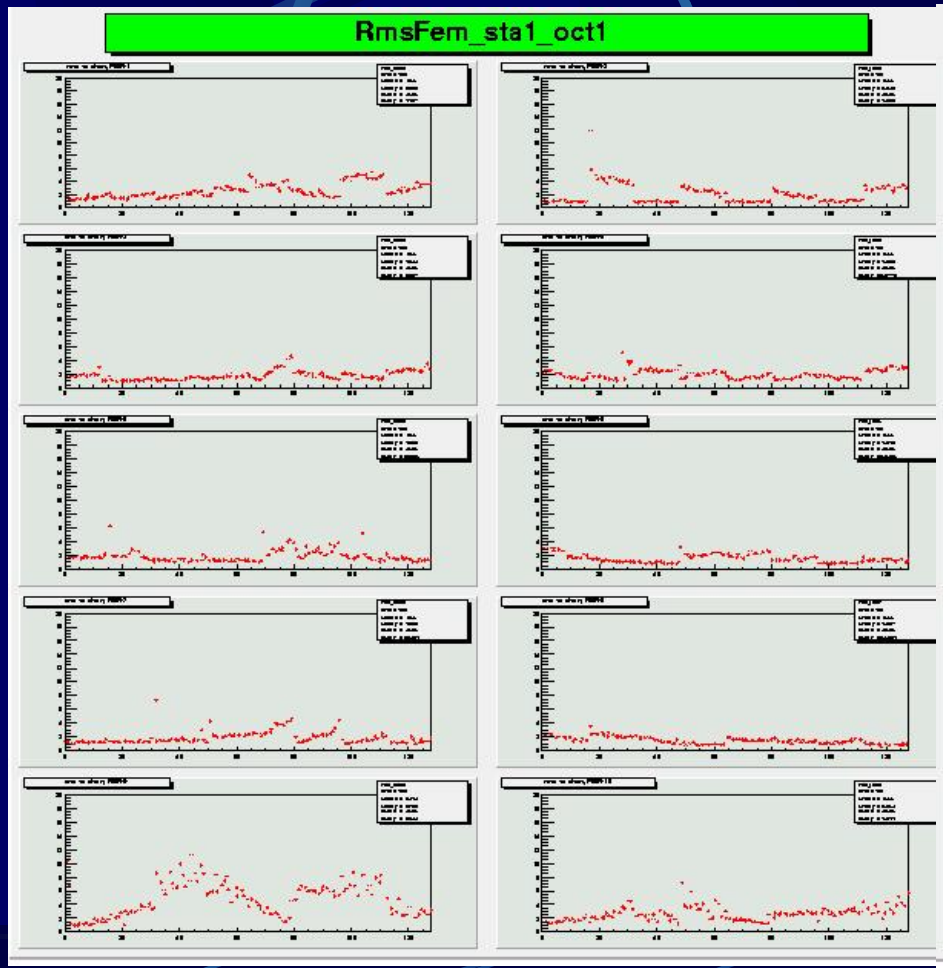


Vérifications

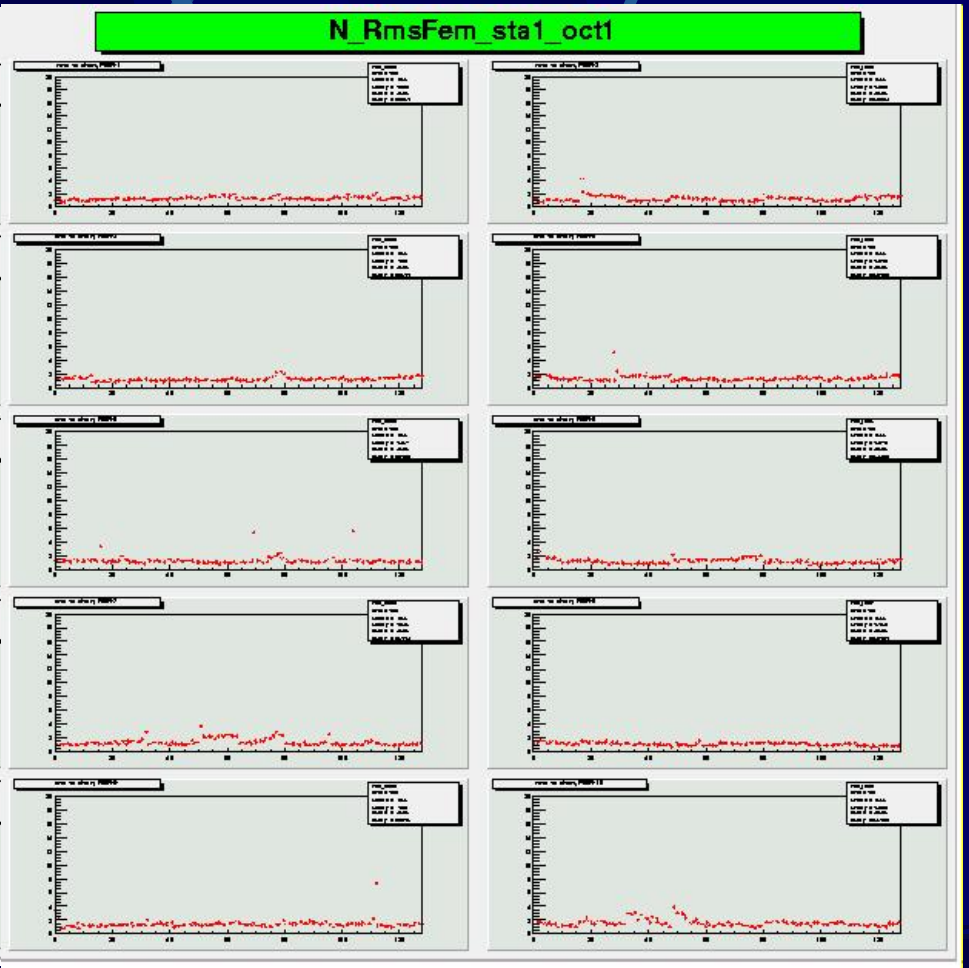
- Vérifier le câblage
- (recâbler)
- Réduire le bruit
- Remplacer les cartes mourantes
- …

Réduire le bruit (station 1)

8 Août



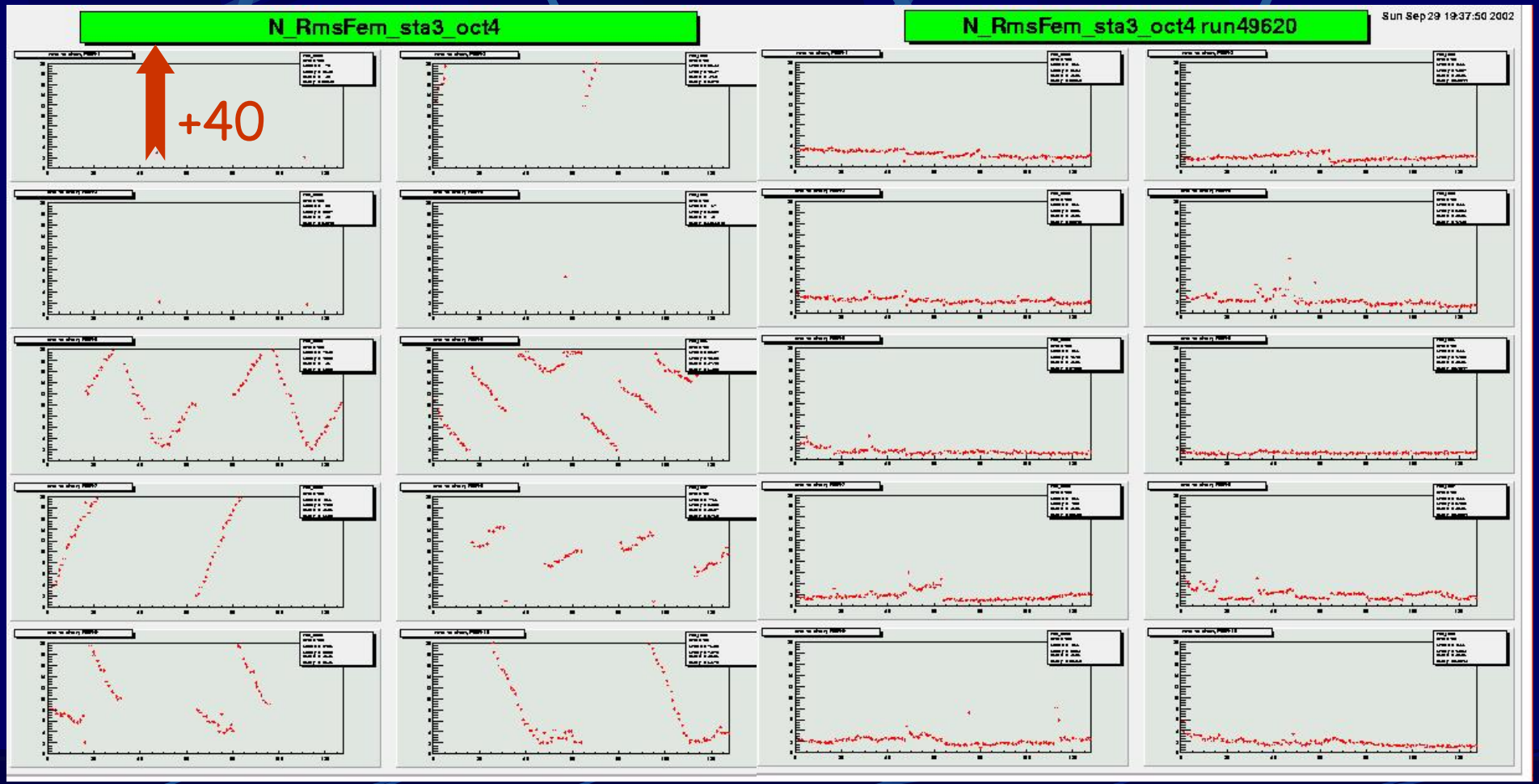
21 Août



Réduire le bruit (station 3)

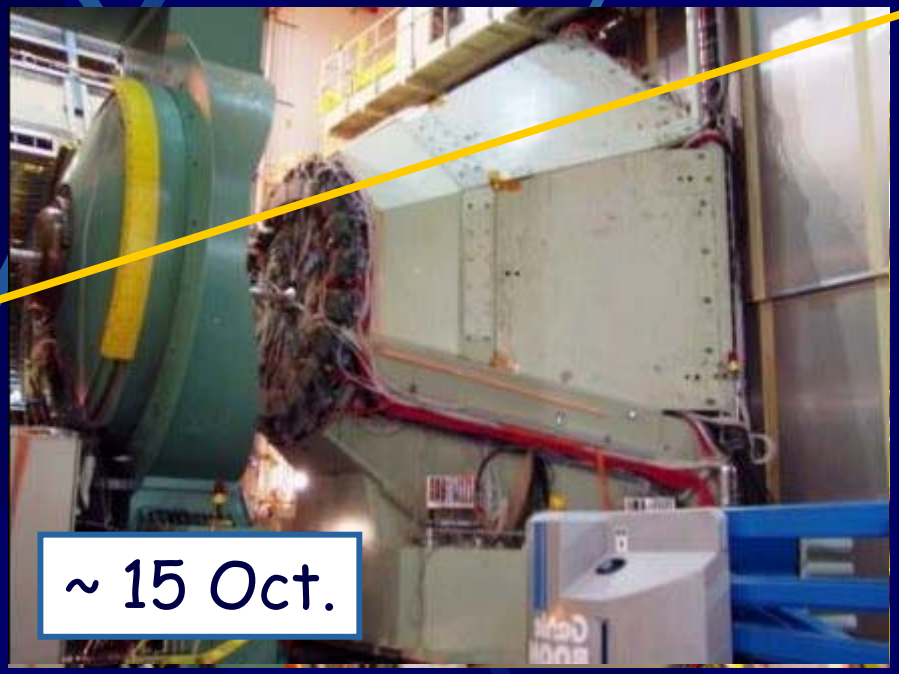
21 Août

29 Sept.



La suite…

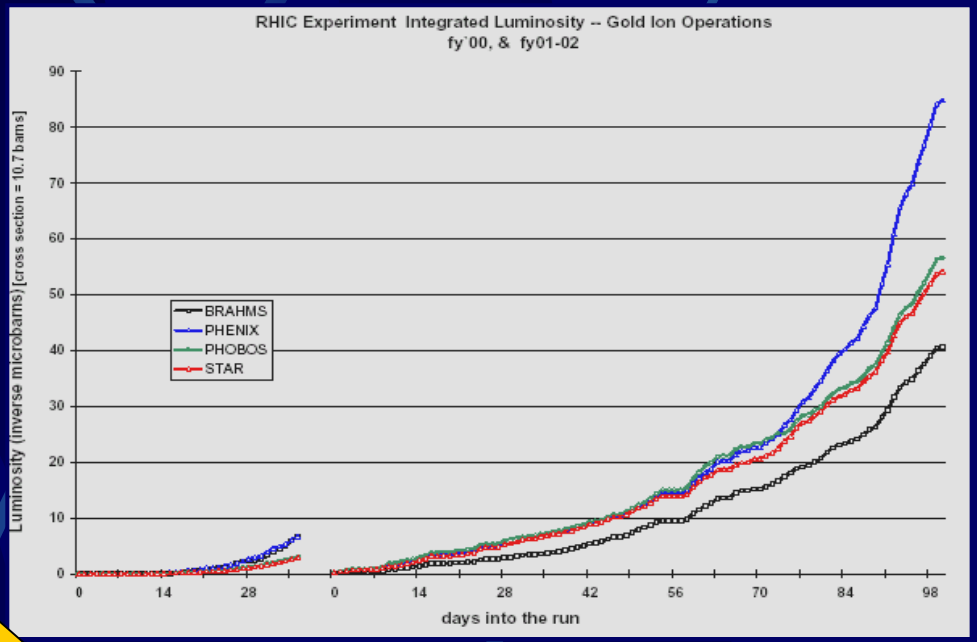
- Enlever l'échafaudage (commence aujourd'hui)
- Poser l'abat-jour
- Vérifier que tout marche encore…



- Enregistrer et reconstruire des cosmiques
- Être prêt pour le prochain run…

Le calendrier

- Run 1
  - 5 sem. en été 2000
  - or+or 130 GeV
- Run 2
  - 15 sem. automne 2001
  - or+or @ 200 GeV
  - p+p @ 200 GeV
- Run 3 en 2003
  - d+or @ 200 GeV
  - (p+p polarisés)
- Run 4 en 2004
  - or+or @ 200 GeV
  - x 10 luminosité

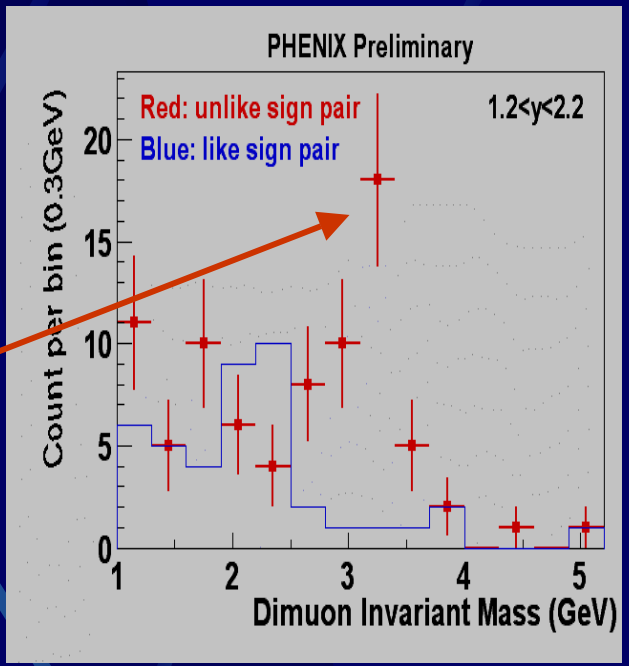


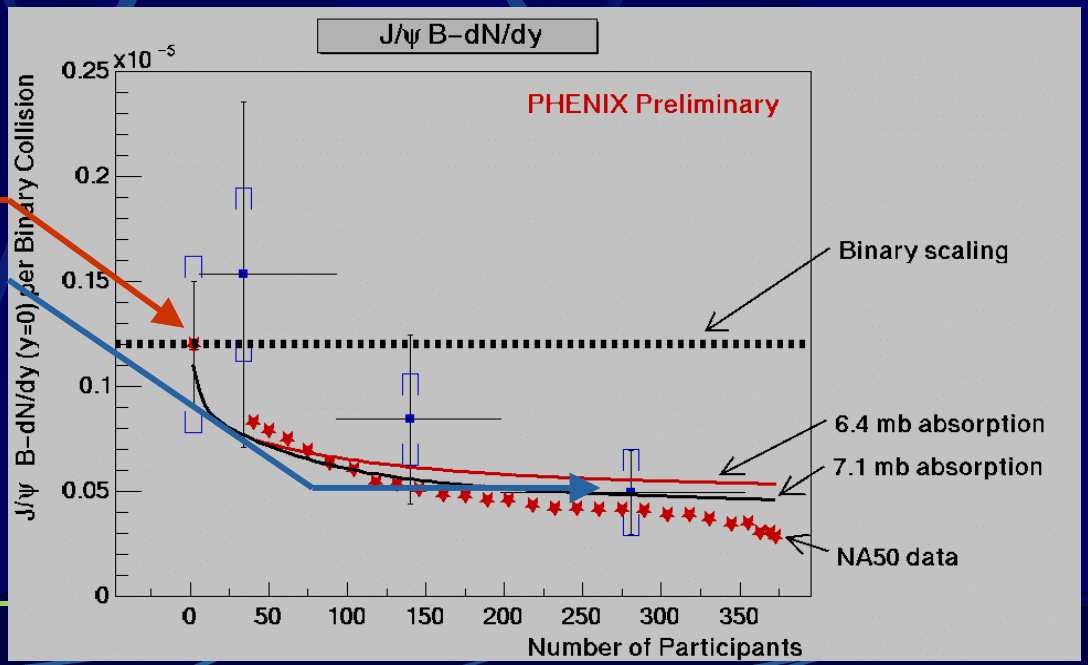
Résultats présentés
à Quark Matter 2002
Premiers signes du PQG ?

Confirmation du PQG ?
Suppression du J/ψ ?

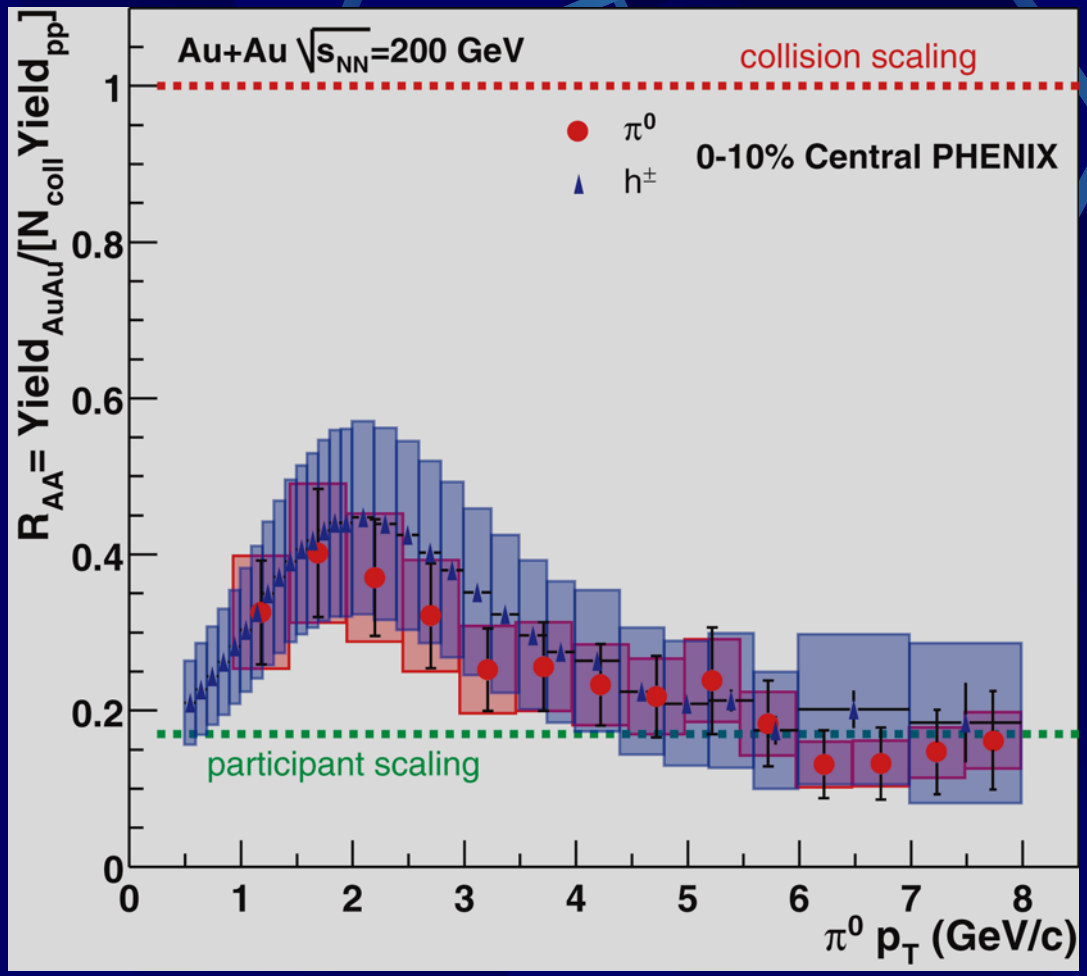
La physique (run 2)

- $J/\psi \rightarrow \mu\mu$
  - 36 evts en p+p,
  - Analyse du run or+or en cours
- $J/\psi \rightarrow ee$
  - Vus en p+p !
  - 11 evts en or+or !
- Pas assez de stat pour conclure !





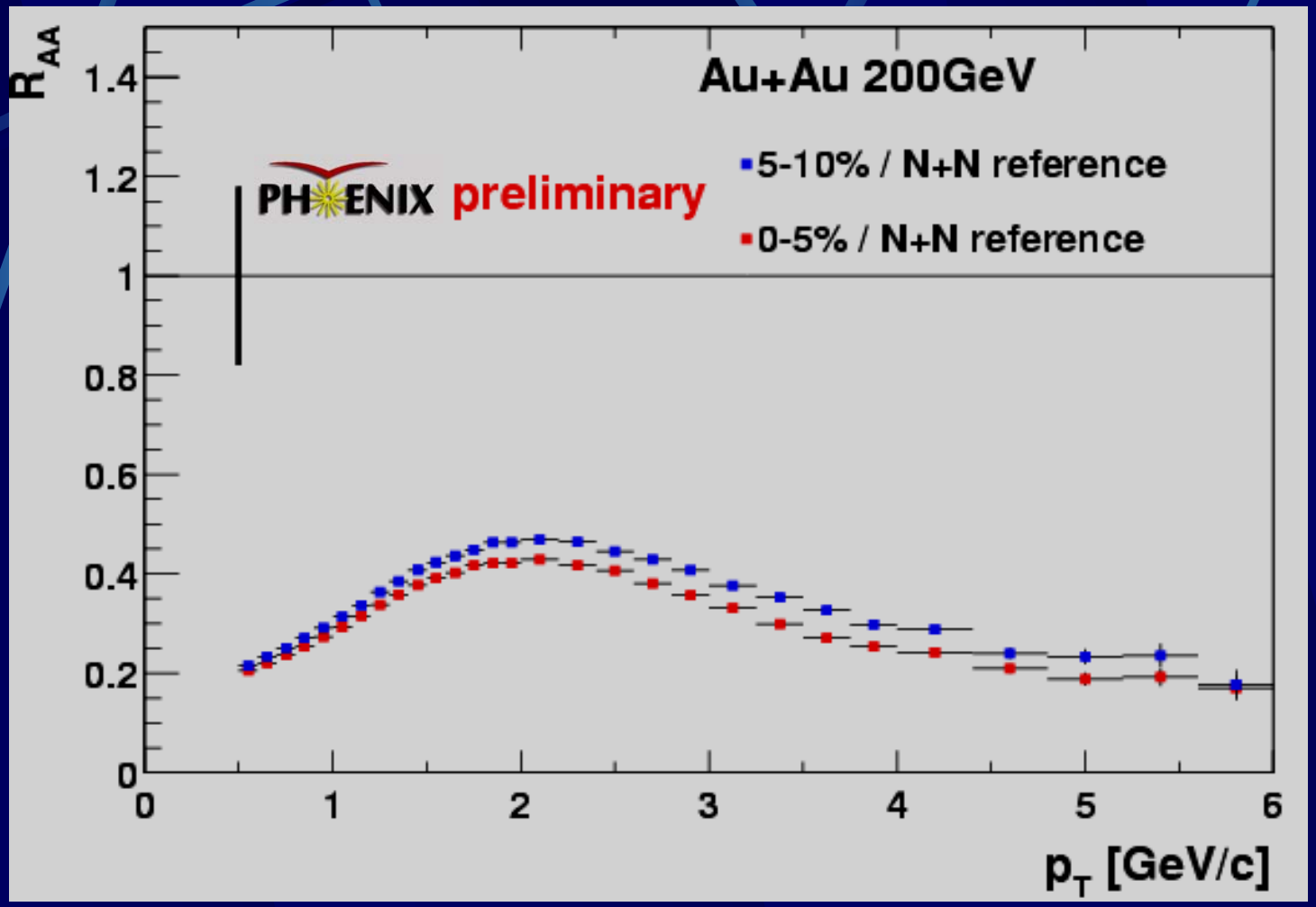
La physique (run 2)



- Déjà des signes du Plasma !
  - Les jets sont supprimés dans les collisions violentes !
  - % collisions p+p
  - % nombres de collisions
- Plein de résultats
  - (cf. Paris meeting)

http://polywww.in2p3.fr/phenix/meeting/

La physique (run 2)



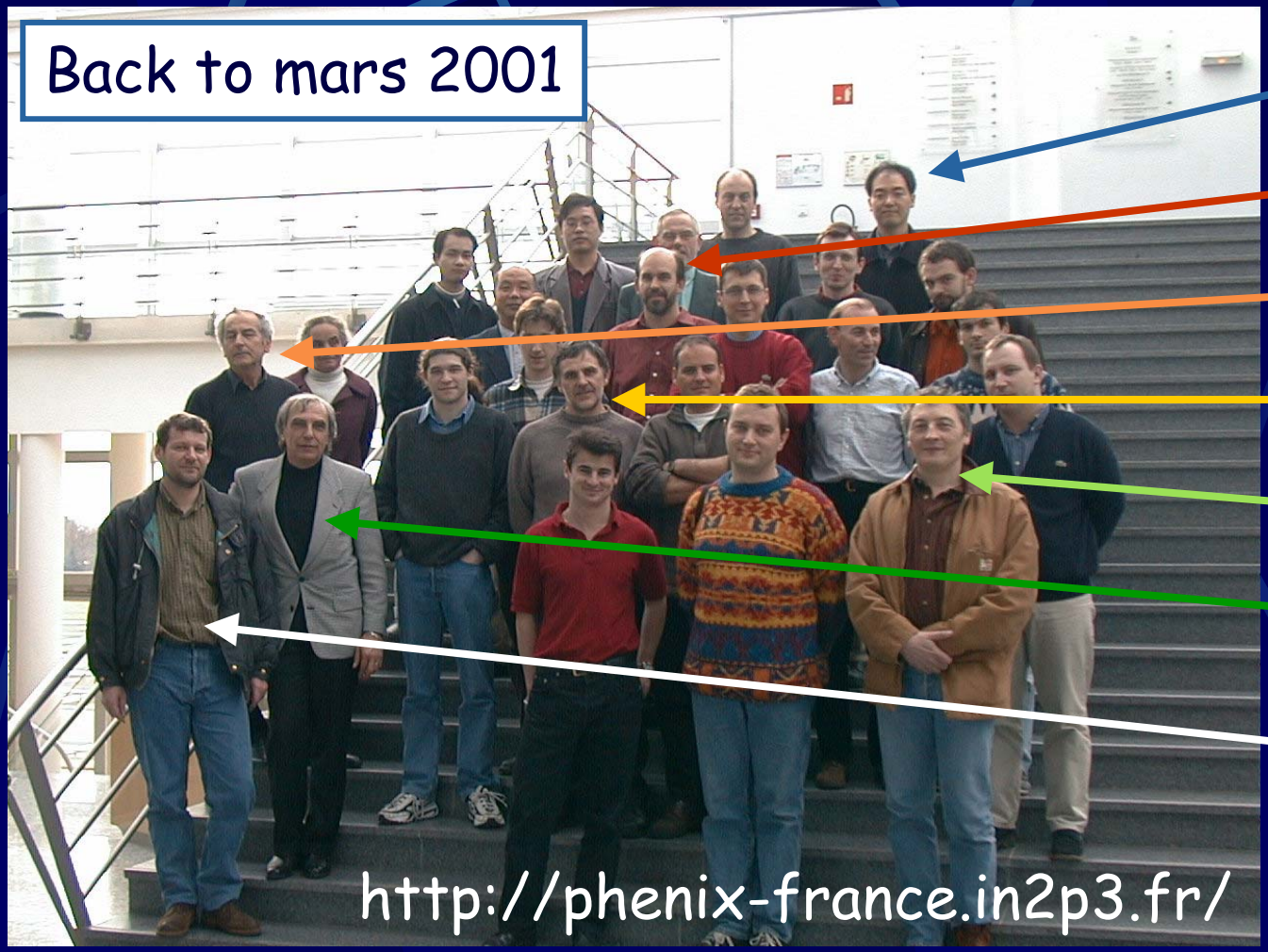
L'informatique

- Le soft PHENIX marche à Lyon
  - Albert est notre Csar !
- Étude des dimuons du run 2
  - Nanodst muons (Frédéric)
  - Fraction de la prod. (Raphaël)
- Simulation
  - Étude d'un futur trigger (Geun-Beom)
- …

Les gens du LLR

- Les « pionniers »
  - Michel Gonin, Louis Kluberg, Pierre Petiau, Albert Romana.
- Les « nouveaux »
  - Raphaël GdC
  - Olivier Drapier
  - Geun-Beom Kim
  - Frédéric Fleuret
  - ViNham Tram
- Les ITA
  - Alain Debraine
  - Franck Gastaldi
  - Simon Chollet
  - …

Phenix France



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