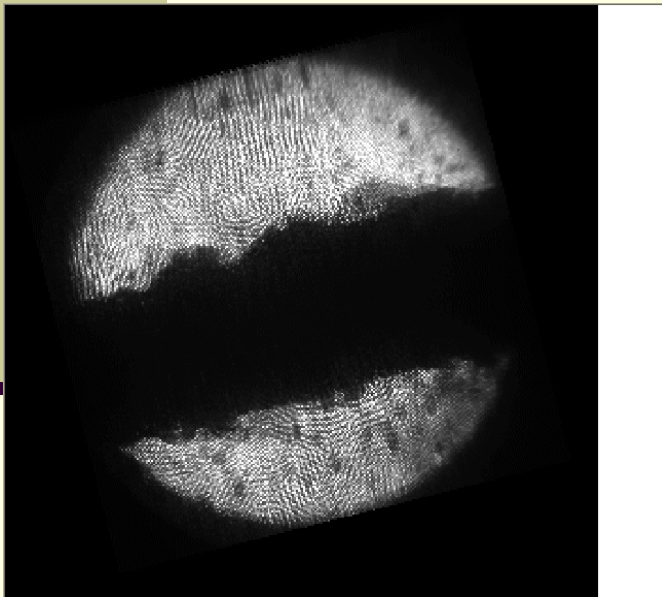




# The **MER**cury **I**ntense **T**arget Experiment – or **nTOF11**



*20m/sec Hg jet achieved on February 14, 2007  
MERIT Collaboration – ORNL test setup*

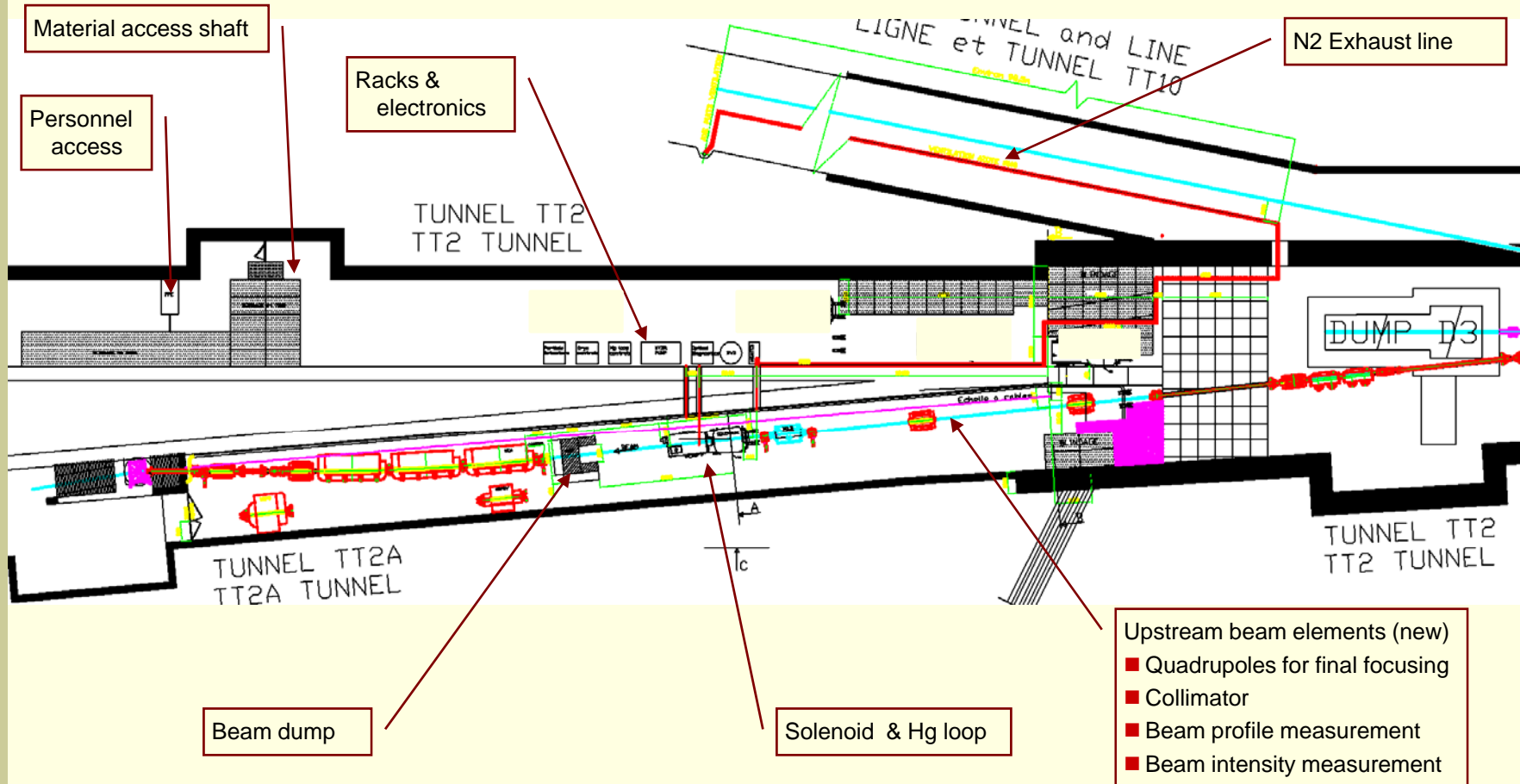
## Installation Status

[A. Fabich – CERN, AB Dept.](#)

(for the MERIT collaboration)

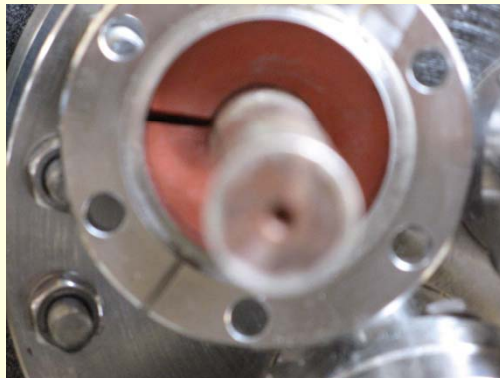
ABOC Meeting  
CERN – June 19, 2007

# MERIT Experiment – Layout



# MERIT Pulsed Solenoid Repair

- The repairs for the pulsed solenoid were finally concluded beginning of June
  - Original silicon rubber disk was replaced by GoreTex material in all electrical feed throughs
- Several tests and thermal cycles with the cryogenics system in build.180 were performed
  - No observed LN2 leaks on all leads with magnet filled at 80% of LN2 and when pressurized at 5-bar with N2 gas
  - Improved insulation kept the ice formation to acceptable levels ; use of air fans required
- Based on these results, on Monday June 11<sup>th</sup> the safety officials gave the green light for the installation





# Installation activities

- Monday June 11<sup>th</sup> (5h)
  - Completion of cabling installation, ODH system reception, other auxiliary cabling works
  - Installation of the Hg-loop heaters, snout
  
- Thursday June 14<sup>th</sup> (11h)
  - Installation of the experimental equipment
  - TT2A: Hg-loop and solenoid, alignment
  - TT2: cryogenics, optical diagnostics & particle detector electronics
  
- Monday June 18<sup>th</sup> (10h)
  - Installation & alignment of the beam line components, BDI, dump
  - Complete installation of optical diagnostics & particle detectors
  - Start cabling of cryogenics system

# Some photos... - Thursday June 14<sup>th</sup>

## Transport armada getting ready...



All material was loaded on trucks the day before

# Some photos... - Thursday June 14<sup>th</sup>

Lowering of the 5 tons solenoid....

and the cryogenics equipment....



June 2007

A. Fabich, CERN

6



# Some photos... - Monday June 18<sup>th</sup>

**Beam instrumentation, magnetic beam elements, particle detectors, dump ...**





# Remaining activities

- A **full day access** is still required to complete the installation of the beam elements
  - Two quadrupoles: placing, alignment, connecting
  
- Closure of the shaft
  - Since this activity is at the at the upstream part of the TT2 tunnel where radiation levels are very low could the access conditions reconsidered?
  - It is also subject to the crane schedule and preferably should be done before end of June
  
- Completing the beam line installation **would allow starting with the beam commissioning** and setting up of the experimental equipment – apart from the cryogenicis





# MERIT run in 2007

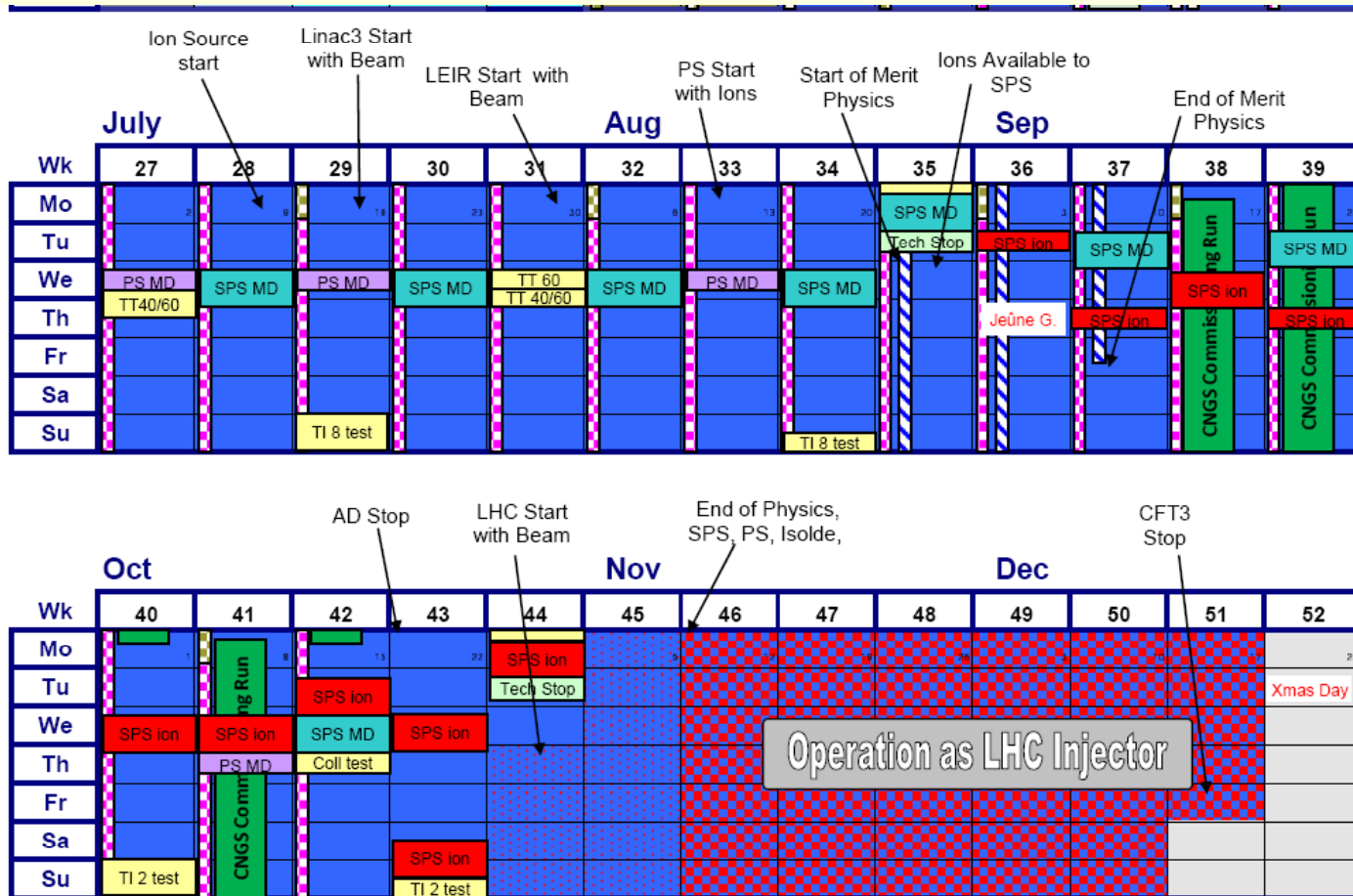
- There is a very interesting physics program with important results to be obtained even if the cryogenics system is not completed
  - Part of the program was already foreseen without magnetic field
- The completion of the cryogenics system will be re-discussed end of August when the availability of the AT/ECR team is better known
- Studies to understand the consequences of having the second part of the MERIT program at the beginning of the 2008 run are ongoing
  - Conflict with the newly announced LHC program and the possible nTOF re-start are the main issues
- Many thanks for the efforts and support to all the colleagues involved!



# Backup slides



# MERIT Experiment – Schedule



1.87 x 15.39 in



# The MERIT experiment

A **proof-of-principle test of a target station** suitable for a Neutrino Factory or Muon Collider source using a 24-GeV proton beam incident on a target consisting of a **free mercury jet** that is inside a **15-T capture solenoid magnet**.

Proposal submitted to INTC – May 2004

Experiment approved as **nTOF11**

## Participating Institutes

- BNL, MIT, ORNL, Princeton University
- KEK
- CERN, RAL

## Spokespersons

- H. Kirk (BNL), K. McDonald (Princeton Univ.)

