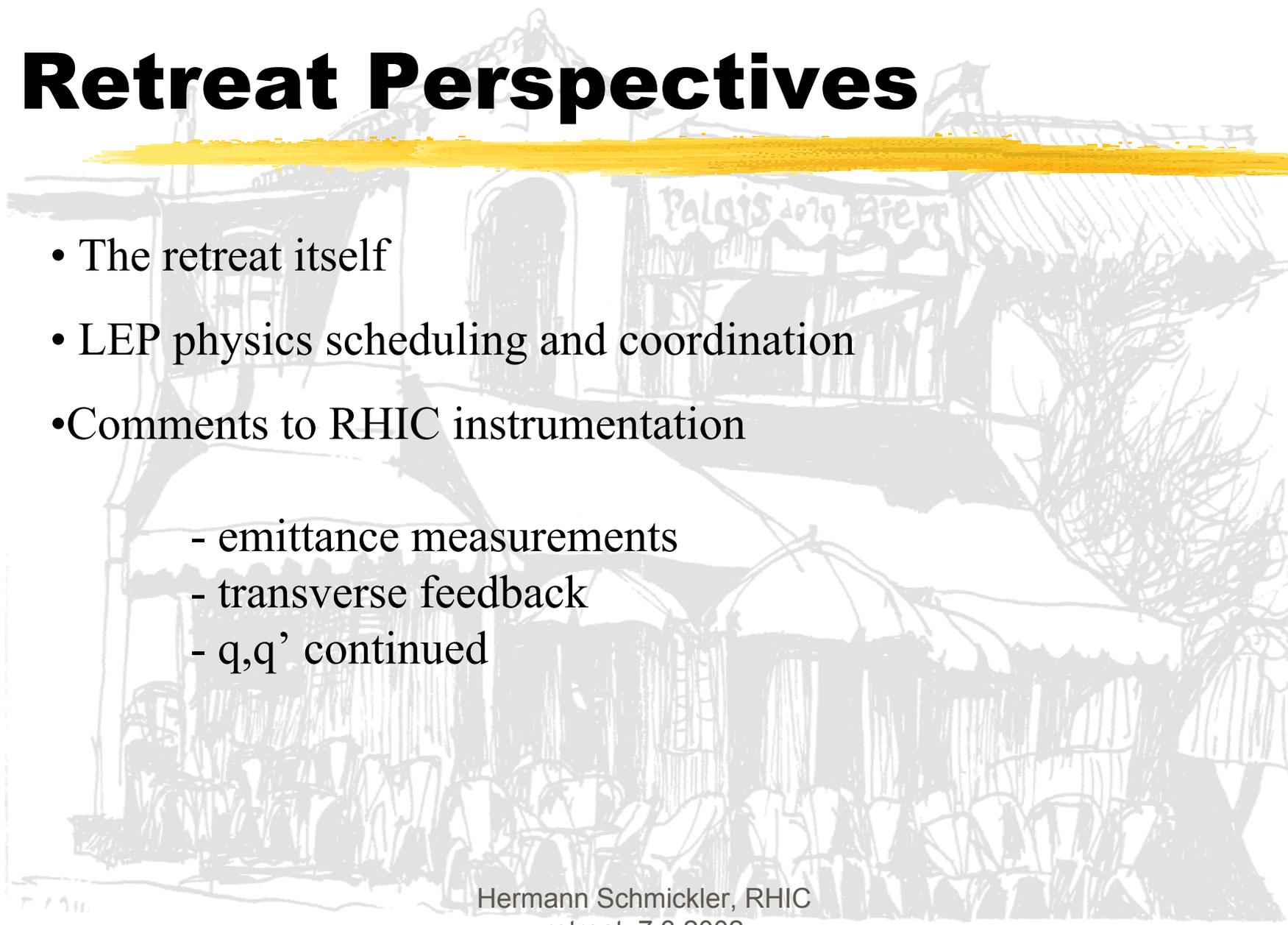


# Retreat Perspectives



- The retreat itself
- LEP physics scheduling and coordination
- Comments to RHIC instrumentation
  - emittance measurements
  - transverse feedback
  - $q, q'$  continued

# RHIC retreat 2002

- Very nice event, perfect location
- Comparison to 10 "LEP Chamonix workshops"
  - same concept, almost same composition of participants, more people from machine operations
  - similar cost/participant
  - gets looked at from non-participants as luxury
  - good follow-up has to proof benefit of investment
- Objectives:- circulate information
  - team-building
  - prioritization of work → follow up
  - room for discussion: no, schedule too tight
- General impression: No major problems

Good: no parallel sessions

# LEP scheduling/coordination

- Definition of objectives before run:
  - number of days to run, fraction of time to be spent on machine development, goal for integrated luminosity
- Difference LEP <-> RHIC: LEP: almost 4 identical experiments with same insertions
- Strict separation of responsibilities:
  - LEP physics coordinator: Mandate for one year for a person out of the physics community. One voice representation of LEP experiments with decisive power.
  - LEP machine coordinator: One of the machine physicists doing shifts (EIC= engineer in charge) with a rotating mandate of one week.

# LEP coordination/MDs

- Two scheduling meetings Monday and Friday; significant difference in running objectives for week/week-end
- Machine development handled by a committee (SL-PERC= SPS-LEP performance committee)
  - experimenters has to submit a formal MD request
  - list of requests was discussed in public meeting, prioritized and time allocated.

Interesting concept:

**No new MD time, if data from previous MD not analyzed and written up!**

# Remarks to instrumentation (1/5)

- **Emittance measurements**
  - RHIC should reevaluate the potential use of wire scanners taking into account recent developments.
  - These wire scanners do not have to be available necessarily for the full intensity beam.
  - In the SPS we also observed beam-loss induced problems with the IPM. Solution: dislocation, collimation...
- **Calibration of measurements:**
  - wire scanners, online beta measurements...

# Remarks to instrumentation (2/5)



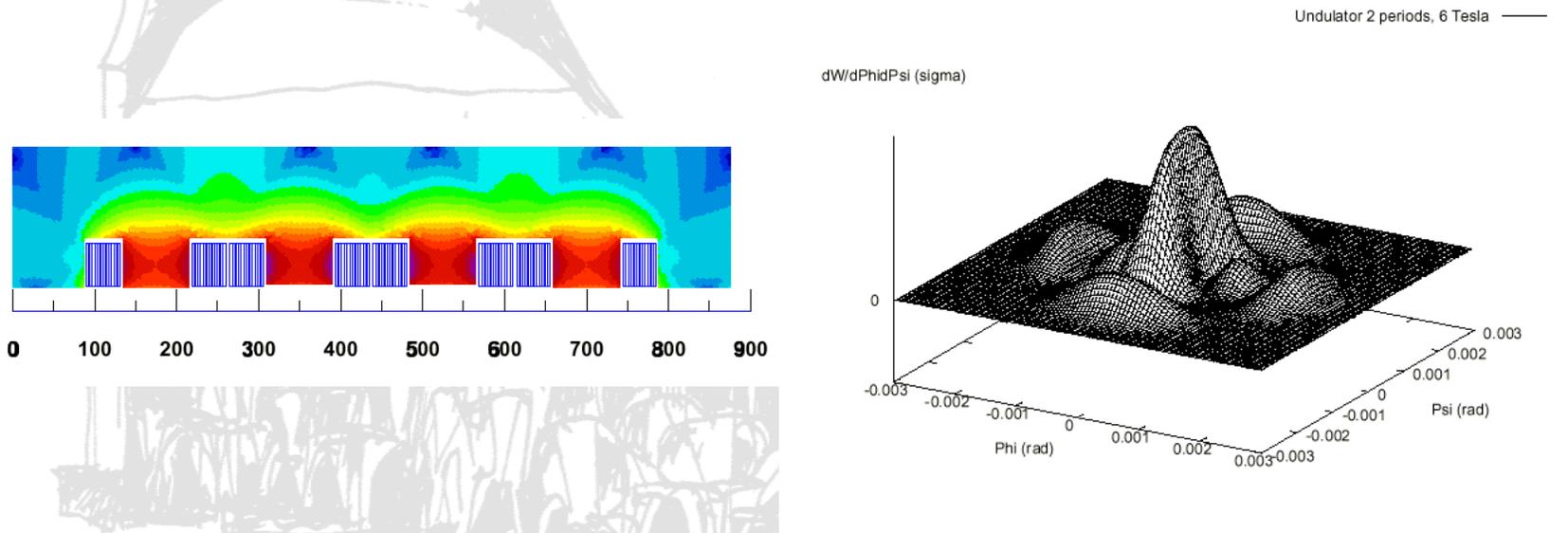
## ■ Emittance measurements

Present Concept for LHC:

- SC-Undulator and synchrotron light telescope
- wire scanners for up to 10% of nominal beam intensity
- IPMs (main motivation: ion program)

# SC Undulator in IP4

- The 2 period SC Undulator planned in IP4 will generate enough photons to observe the pilot bunch at 450 GeV and perform turn by turn measurements of the nominal batch at injection, even without a “bumper” when only one of the sidelobes will be extracted.



# Remarks to instrumentation (3/5)

- Transverse Feedback :
  - Purpose of feedback not clear; evaluation of required damping time?
  - All recent bunch to bunch feedbacks (PEP-II...) have tune measurements integrated
  - Do you need the TFB for the 2002/2003 run? What about delaying the TFB by one year and do a redesign of ARTUS at the same time?

# Remarks to instrumentation (4/5)

- $Q, Q'$ :
  - 1) -Do not count on tune feedback for PLL tune tracking to work (insensitivity to coupling)
    - gain by separating hor.& ver. Measurements on different bunches
  - 2) make amplitude regulation of exciter operational. This gains (within limits) in insensitivity to chromaticity.
  - 3) 2<sup>nd</sup> resonant BPM at 180 deg. Phase advance, signal recombination to suppress synchrotron sidebands. Issue not clear at all.

# Remarks to instrumentation (5/5)

- $Q, Q'$ :  
collaboration with CERN (LHC prototyping)
  - a) New hardware implementation of PLL  
(for year 2004)
  - b) Simulation tools development
- Get started by a topical workshop on  $q, q'$  control  
by mid 2002. Attached to BIW?