

# IFR repair strategy

- Ongoing activities
- RPC repair/substitution options
- Decision path

## Ongoing RPC activities

- **Four test stations at work**
  - ❑ Heating effects on various configurations
  - ❑ Gas studies, additives
  - ❑ Preamplifiers
- **New RPC production started**
  - ❑ 12 layers (24 modules) of Forward EndCap (Top West)
  - ❑ Additional 18 modules ordered for R&D in test stations
  - ❑ Double layer structures will be tested
- **During November shut down 12 chambers will be extracted and available for studies**
- **These 24 modules cover the whole spectrum of performances: test bed for repair studies**
- **The new chambers will be delivered at SLAC fully assembled for insertion in Mid-November**

## **RPC Options**

- **Treatment with gas additives (no extraction)**
- **RPC substitution**
  - ❑ **Improvements in materials and construction after several more years of R&D (ATLAS, CMS, LHCb, ALICE, ARGO)**
  - ❑ **No engineering, present electronics, DAQ, monitoring, software**
  - ❑ **Double gap for redundancy**
  - ❑ **Procurement phase: 3 months (conservative)**
  - ❑ **Expected production rate: 100 modules/month**

# Scintillator option

- Parallel effort to RPC path
- Extruded scintillator with co-extruded coating, WLS fiber and multianode phototubes
- Technology developed for large neutrino experiments (MINOS, OPERA)
- Minimal R+D, profit of present experience

# Decision Procedure

- 1) A Committee has been appointed to organize a dedicated workshop on January 15
  - a) first meeting Friday Oct. 6, Committee membership
  - b) Person appointed for cost and schedule analysis
- 2) Working groups will form in October
  - \* detector choice, mechanics and integration
  - \* front end, LV, HV
  - \* DAQ, monitoring
  - \* software
- 3) Search for new collaborators
- 4) Work on various options will be presented at December BaBar general meeting, with preliminary written documents
- 5) Workshop on January 15 to determine feasibility of available options

# Possible scenarios

- 1) RPC only
  - New RPC in Forward End Cap in 2001
  - New RPC in Barrel in 2002
- 2) RPC in Forward Endcap, new Technology In Barrel
  - New RPC in Forward End Cap in 2001
  - New technology in Barrel in 2002
  - Schedule for Barrel under development
  - Need to decide on barrel technology early enough for 2002 installation
- Recommendations on how to proceed after analysis of ongoing tests and conclusions of Jan. workshop
- **Technical board, Executive board, and SLAC will make proposal to funding agencies**