

HPDIRC HOMEWORK: REUSE OF BABAR DIRC BARS

- Eight bar boxes successfully transported from SLAC to JLab in April 2024
- Disassembly of bar boxes at JLab with custom-made CNC to start Q4/2024
 - After first box is open, pause disassembly, perform QA on first bars
- Quality of extracted bars will be evaluated in new JLab DIRC QA lab
 - Bars will be cleaned and inspected for damage/residue, placed in laser setup
 - Main observable: coefficient of total internal reflection (325/442nm)
 - Use simulation to see impact of measured values on separation power
- If quality is good and extraction yield high, continue disassembly and QA
- Decision about reusability of BaBar DIRC bars for ePIC expected to be possible after we have results for 2-3 bar boxes (Q1-Q2/2025)
- Fallback solution: industrial fabrication of new radiator bars (risk register)
 - Recent good experience with series production for PANDA Barrel DIRC (Nikon)
 - In contact with optical industry to explore specifications, cost, schedule
 - Fabrication time of replacement bars and light guides consistent with ePIC project schedule

BaBar DIRC bar boxes during transfer at SLAC and JLab



hpDIRC QA and disassembly labs at JLab

