

CEA/Saclay Lab Report

- Cavity Surface Preparation
- Beam Position Monitor in Cryomodule
- Electronics for Machine Protection System
- EU/FP6/CARE preparation, including SRF
- PhD thesis on TESLA cavity HOM studies

Optimisation of EP Process

■ Improvement of EP parameters

■ Optimization of electric parameters (*in progress*)

- Anode/cathode surface ratio (*influences working voltage*)
- Anode/cathode distance

■ Bath composition (*close from present composition*)

■ Protection against hydrogen

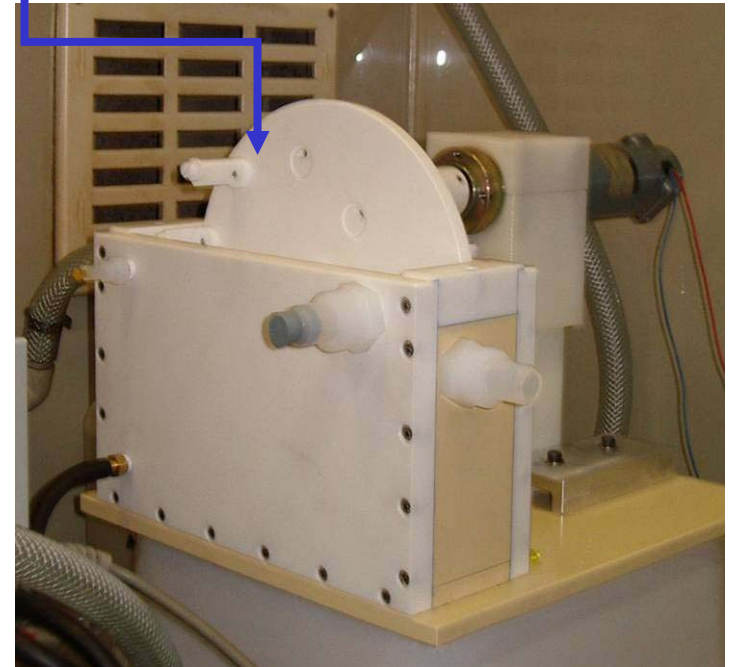
- identification of contaminating steps (*confirmed*)
- Pt sample protection (*failed*)

Samples set-ups :

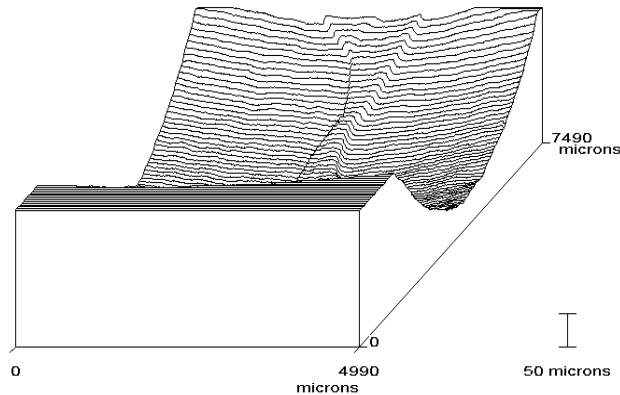
1. standard EP reactor

2. rotating sample holder =>

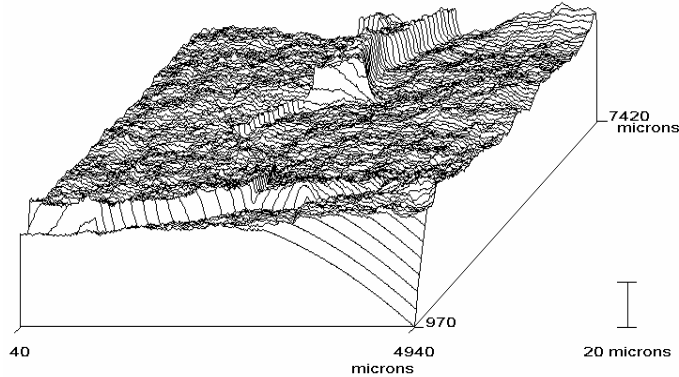
- *same anode cathode distance*
- *reproduces cavity rotation and sequential immersion in the polishing bath*



Morphology at Quench : H enhancement

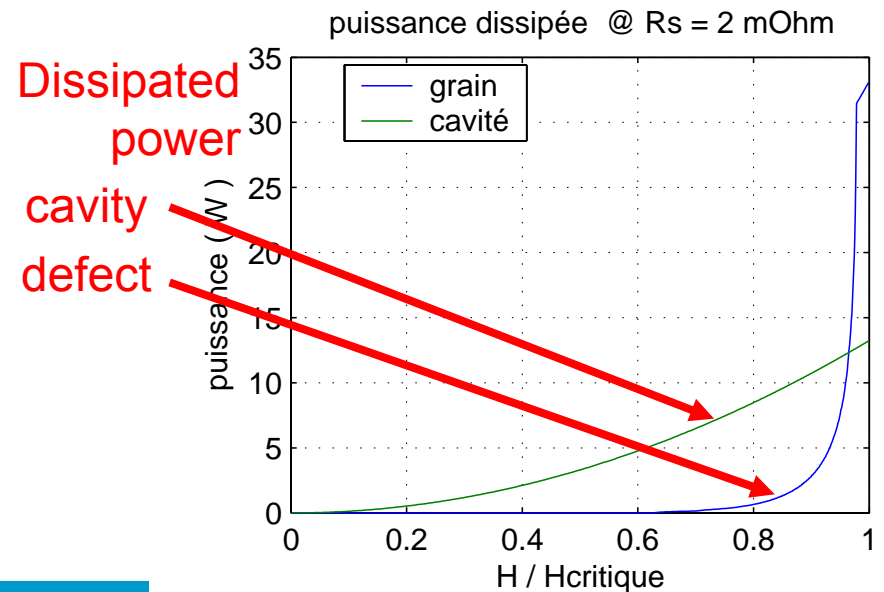
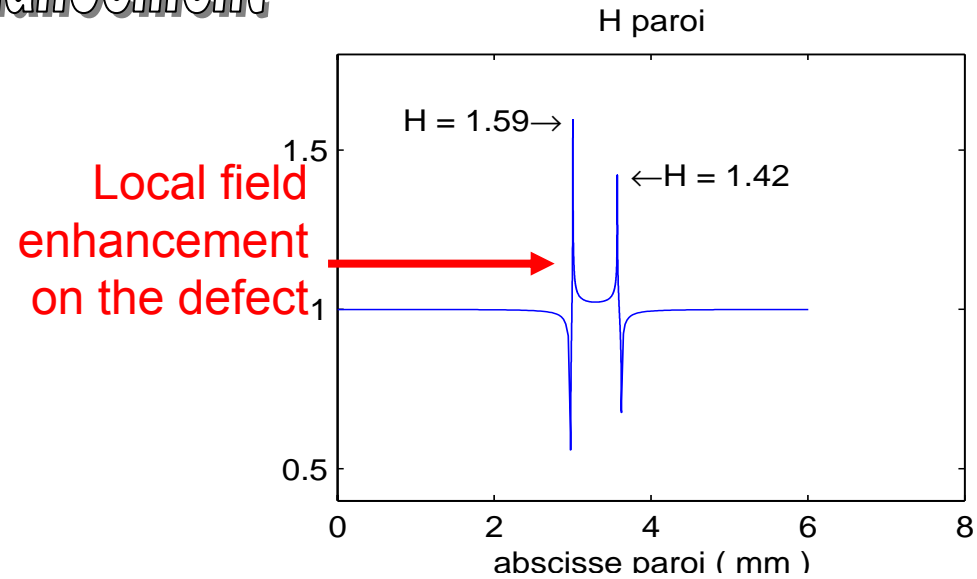


Magnetic field and welding seam direction

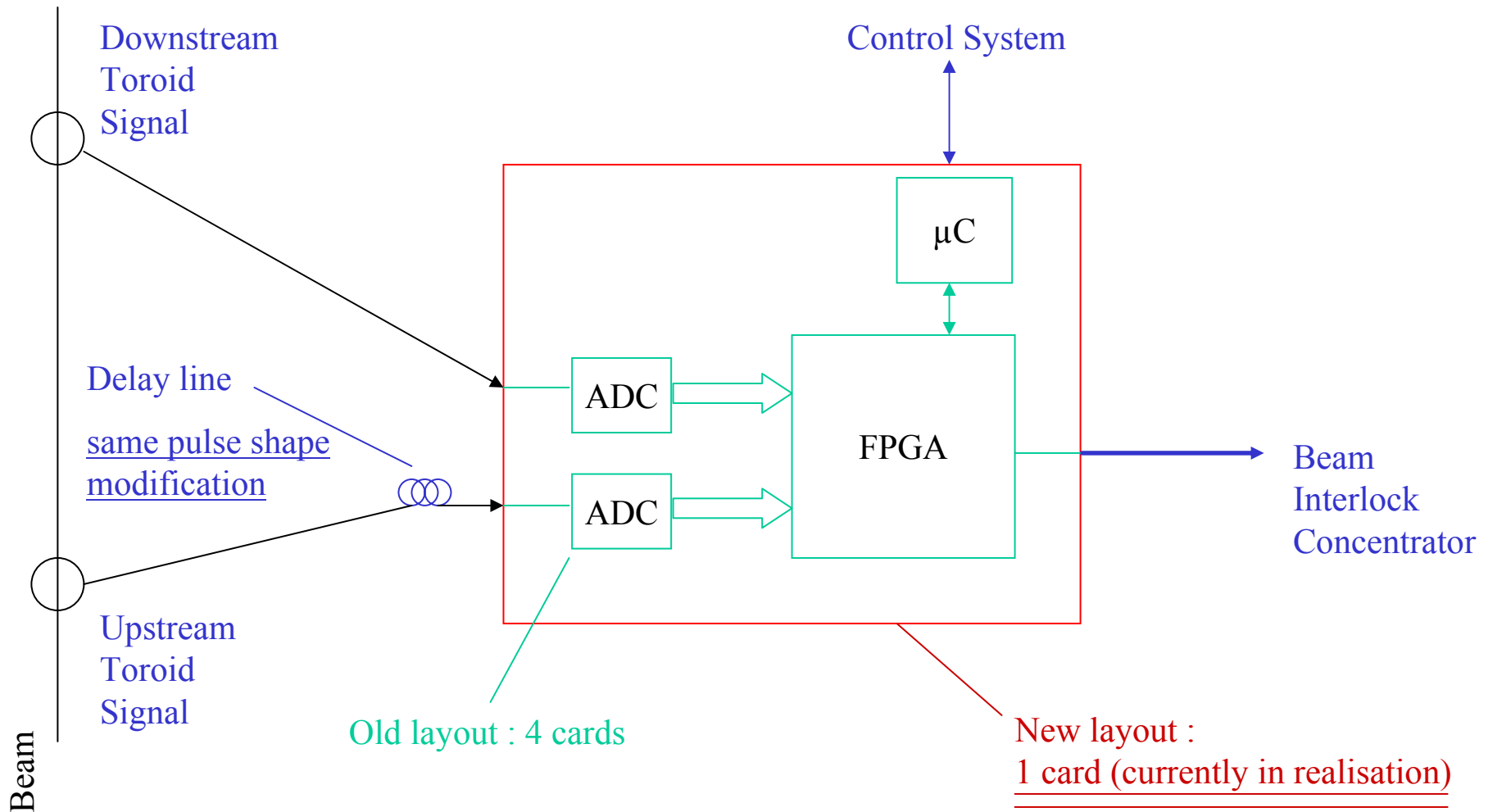


after polynomial correction :

Prominent grain ($20\mu\text{m} \times 2\text{mm} \times 200\mu\text{m}$), perpendicular to magnetic field !



Machine protection with toroids

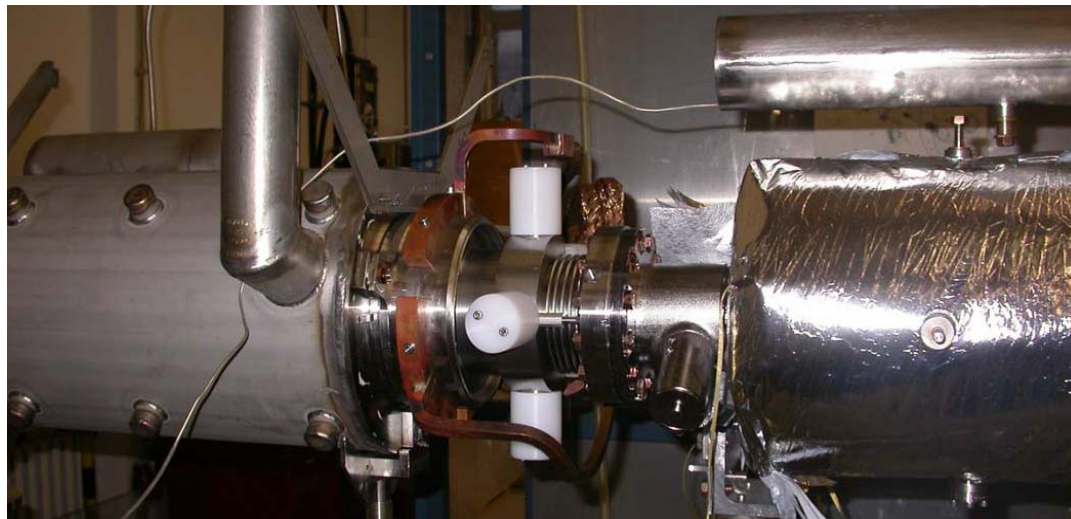


COLD BPM in TTF2

TTF2 version

The BPM is now mounted in module 2*

- Cleaning was difficult
- Feedthroughs have excellent electrical properties
but 50% broke in cold test (4 thermal cycles).



CARE/SRF prototype

A new version will be designed
(meeting at DESY 13/01/04)

- to ease cleaning : holes here (RF impact ??)
- development of improved feedthroughs, more robust to thermal stress
- test on the TTF2 beamline (BPM 77K teststand)

