



EU Status

TILC09 SCRF Session

Lutz Lilje

DESY

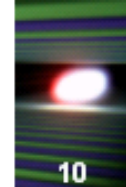
- XFEL Preparation
- Cavity results
- Module Status
- HiGrade

Preparation for XFEL

- **Preparation for Call for tender is an international effort**
 - INFN and CEA are involved in the process
 - M. Champion and H. Hayano were taking part in Production Readiness Review
- **To be ready in May**

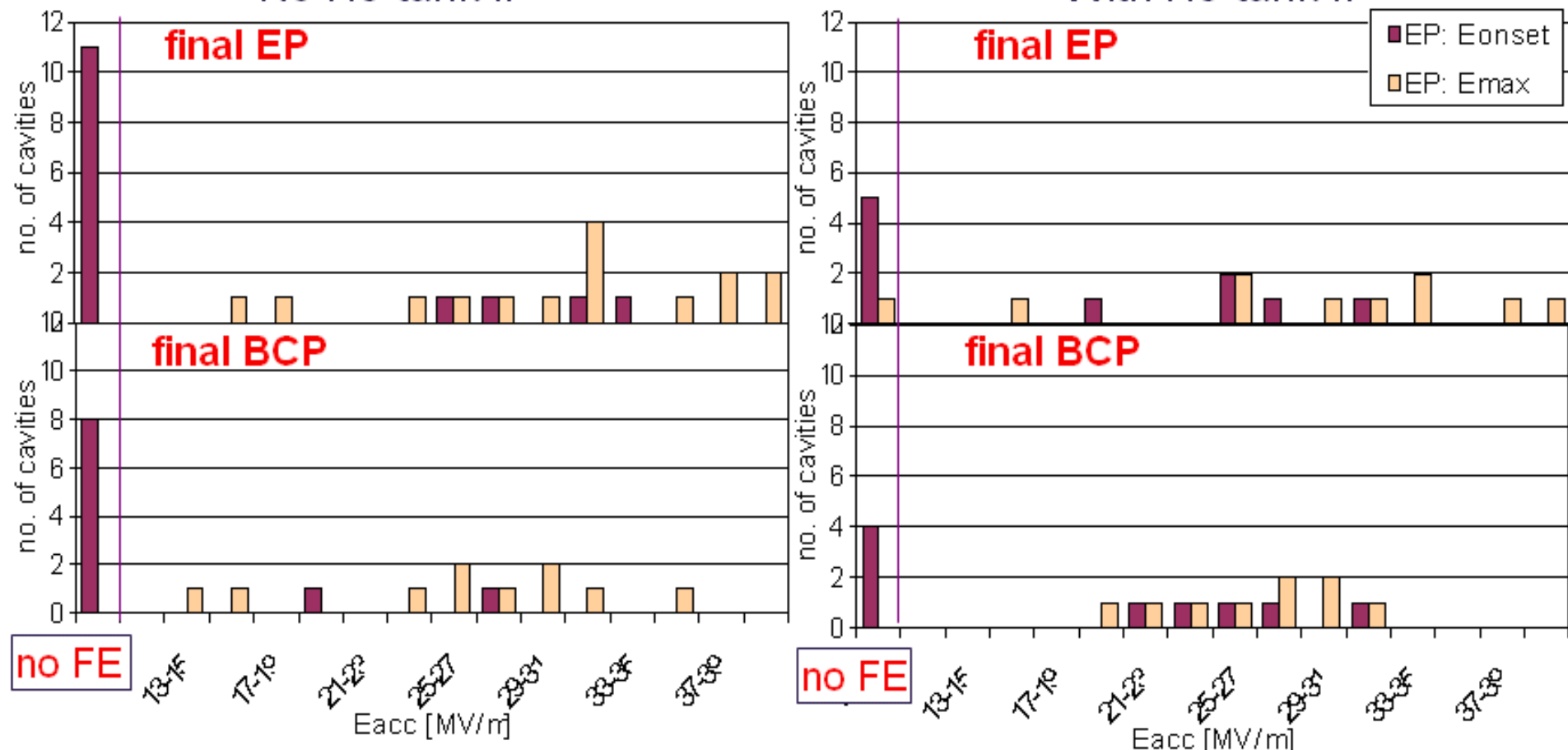
- Evaluation (by D. Reschke)
 - **Streamlining cavity process**
 - Put helium tank at early stage
 - **Performance not changed**
 - Final preparation
 - EP still better than BCP
 - Scatter in data still large
 - Mainly due to manufacturing issues
 - **Results consistent with data from 4th production**
- KEK/Kyoto-type optical inspection system is being put into operation
 - **Ongoing test program**
- Tests in TDP1
 - **20 – 30 tests to provide cavities for prototype cryostats**

Final preparation: Analysis of final test



No He-tank !!

With He-tank !!



=> as expected: some improvement with respect to field emission

=> "final EP" gives higher E_{max} than "final BCP"

D. Reschke, to be published SRF 2009

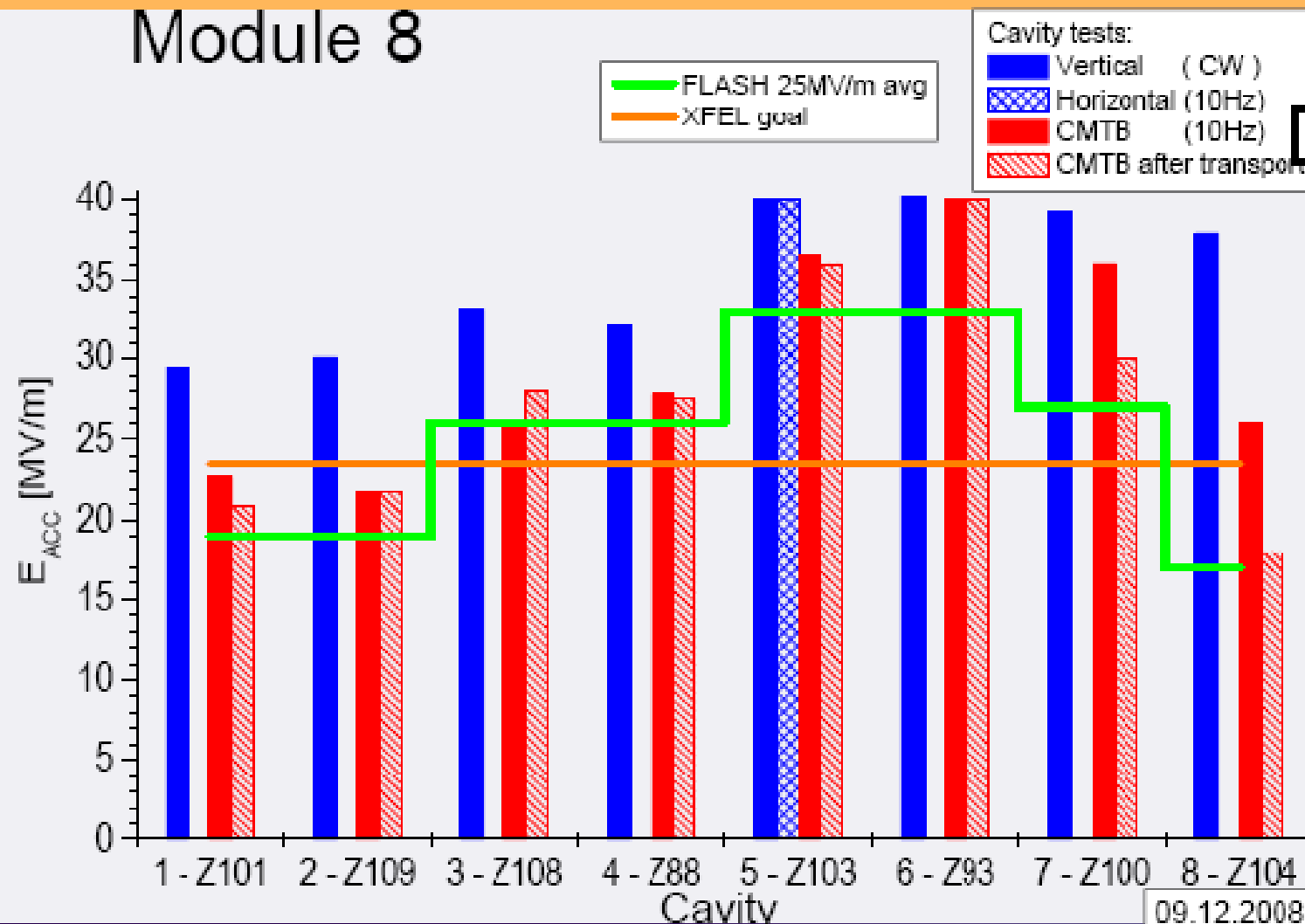


Module Status

- **Re-assembly Module 8**
 - Finished string roll-out
- **Test M3* finished**
- **Cryostats from new vendors will be available for testing soon**

M8 results on CMTB after the transport

Module 8



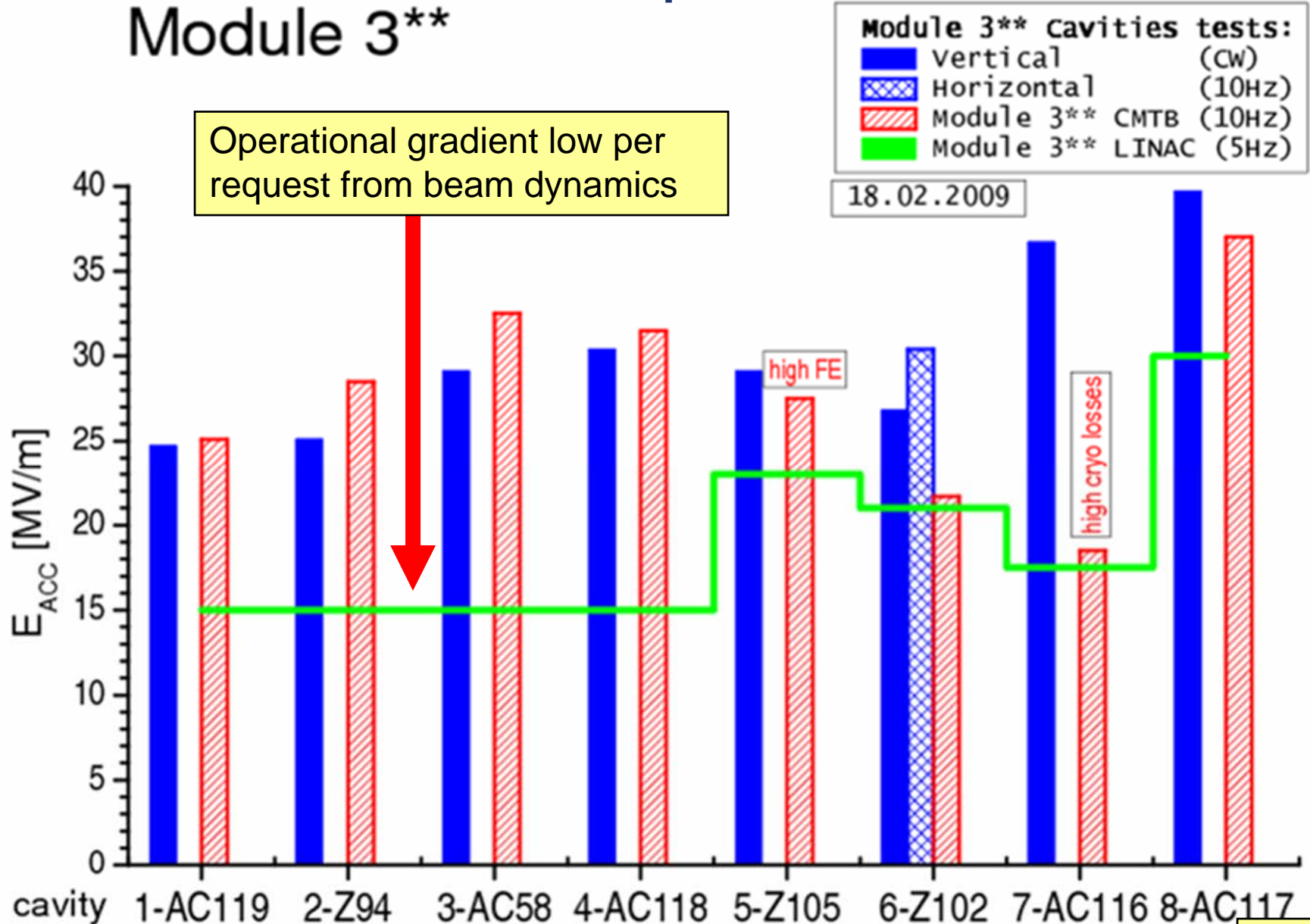
10.07.2008

09.12.2008

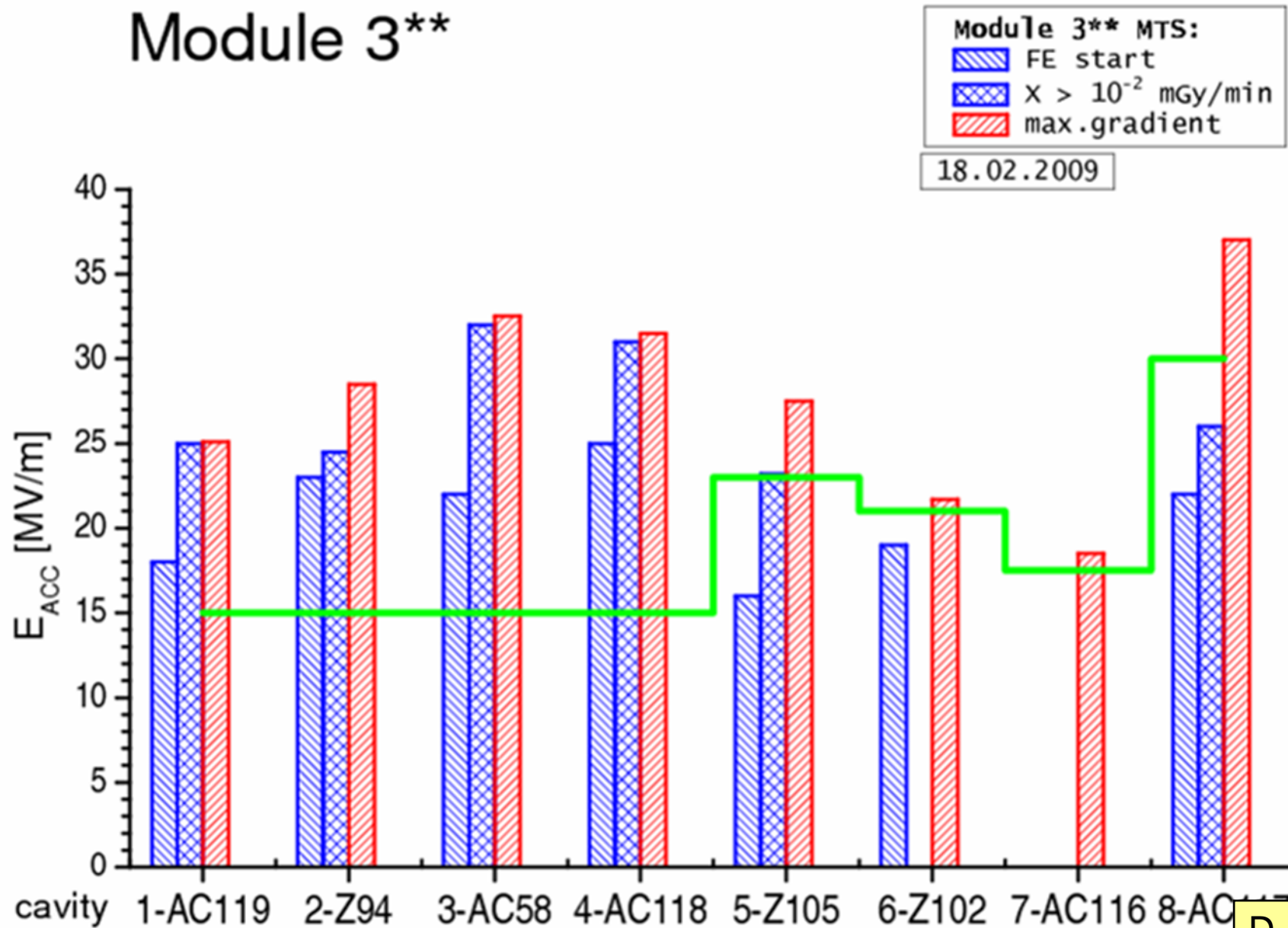
- Warmup to excludes
 - magnetic flux
 - gas condensation
 - Preliminary conclusion
 - Degradation could be a processed field emitter
- Module will be repaired
 - This (as well as the ongoing repair of M8) will block the DESY infrastructure for considerable time
 - Smaller number of tests with EP as final treatment

XFEL Preparation: M3**

Module 3**



Module 3**



- Obtained EU funding for LC cavity program
- Proposed Objectives
 - **Quality control XFEL process**
 - Select regularly (1/month?) a cavity from XFEL process
 - Test I
 - **Validate ILC choice**
 - Horizontal EP + ethanol
 - Test II
 - **Cost reduction**
 - Vertical EP + ethanol
 - Test III
- Open Questions
 - **Manpower DESY and CEA**
 - **EP available at DESY vs. Cost of horizontal EP at company**
 - **Second sound development?**
 - **Fast bakeout?**



Proposed Model for ILC-HiGrade Cavity Production and Preparation: Part 1 – XFEL Production Quality Control

	Technical Choices	Location	Remark
Fabrication	XFEL-like	Company	Include optical inspection
Rough Surface Preparation	XFEL-like	Company	
Optical Inspection I	XFEL-like	Company	
Furnace	XFEL-like	Company	
XFEL Final Surface Preparation	Final BCP or EP, Choice left to XFEL Project	Company	ILC prefers EP
XFEL Standard RF test	With fixed coupling and HOM	DESY	
Preparation for T-Map	Disassembly of HOM and fixed antenna Assembly of variable antenna	CEA DESY?	Transport under nitrogen?
Test I	T-map mandatory	DESY	DESY Manpower? Second sound?
Optical Inspection II	Compare with T-map	DESY	Guided repair option?



Proposed Model for ILC-HiGrade Cavity Production and Preparation: Part 2 – Demonstration ILC Process

	Technical Choices	Location	Remark
Optical Inspection II	Compare with T-map	DESY	Guided repair option?
ILC Final Surface Preparation I	Horizontal EP and ethanol	DESY, Company	DESY capabilities? Which Company?
Test II	T-map (or second sound) mandatory	DESY, CEA	DESY Manpower ? Second sound at DESY or CEA available ?
ILC Final Surface Preparation II	Vertical EP and ethanol	CEA	CEA Manpower Check Schedule with EP installation
Test III	T-map (or second sound) mandatory	DESY, CEA	DESY Manpower ? Second sound at DESY or CEA available ?
More Tests ?			Unlikely due to schedule
Tank welding	Bladetuner with Piezos	Company, DESY	Compatible XFEL Cav. ! Tuner from INFN
Coupler assembly and Final rinse	High-pressure water rinse	DESY, CEA	Coupler from LAL
High-power test		DESY, CEA	CHECHIA, CryHoLab



The end..