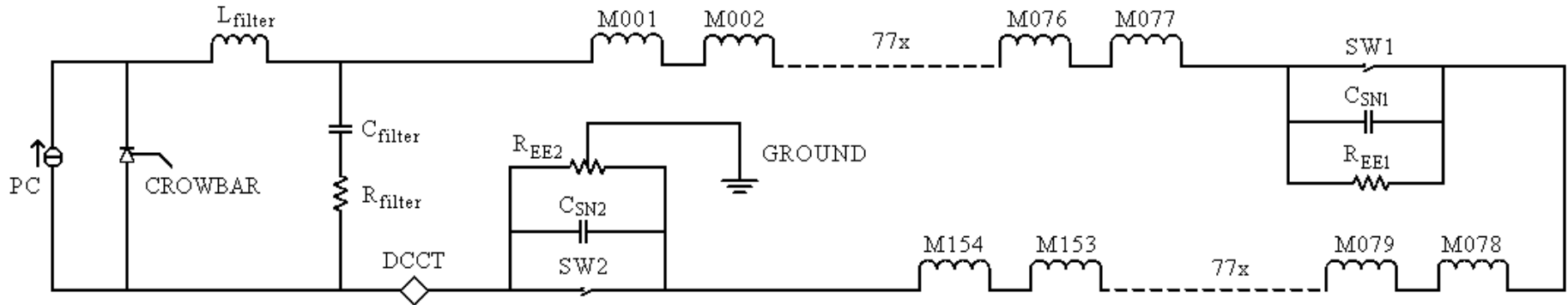
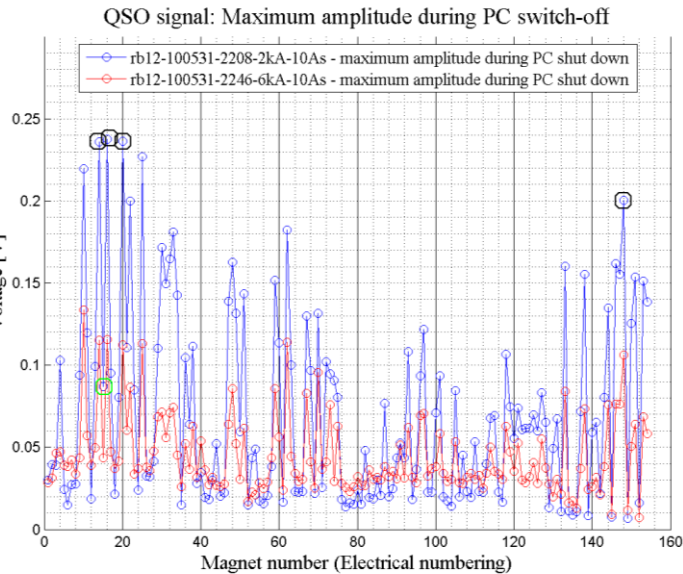
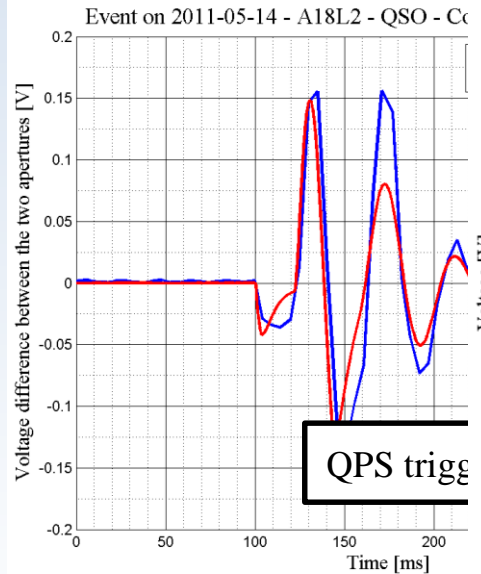
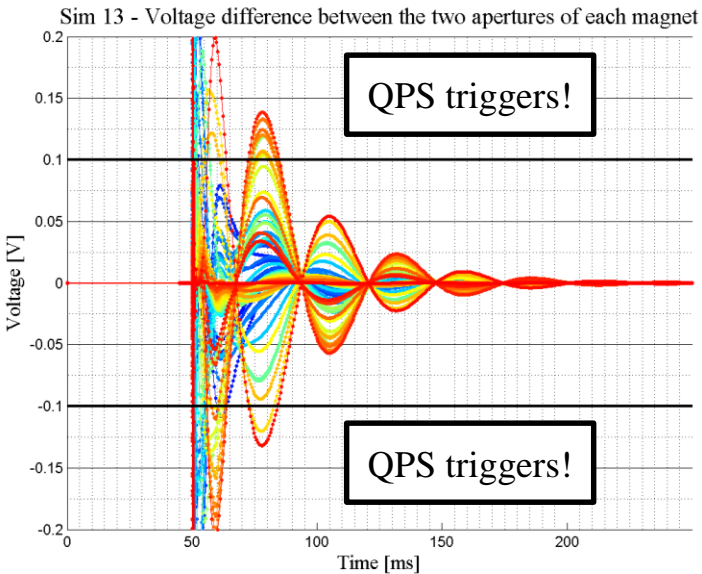


Analysis and Simulation of events occurred in the RB circuit



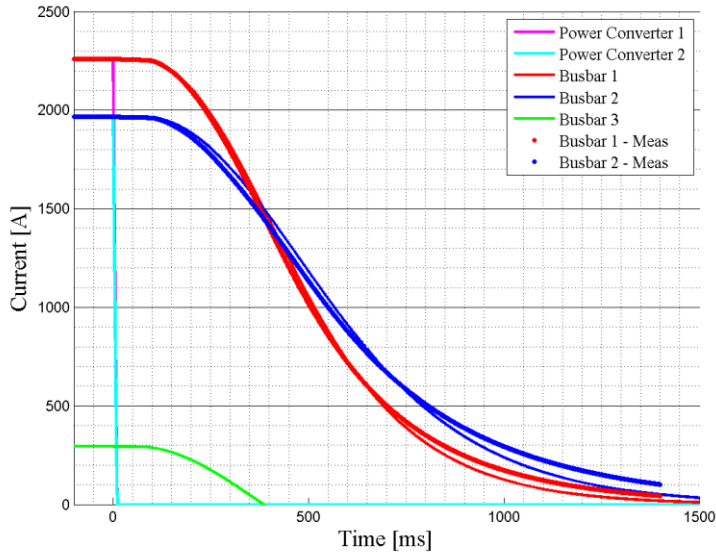
Simulation of the ungrounding of the main dipole chain during EIQA tests.

Analysis and simulation of the AUG event occurred on May 14th, 2011. A faulty AUG button and the unexpected behavior of the power converters caused the firing of the quench heaters of 10 dipoles in S12 and S23.



Circuit simulations

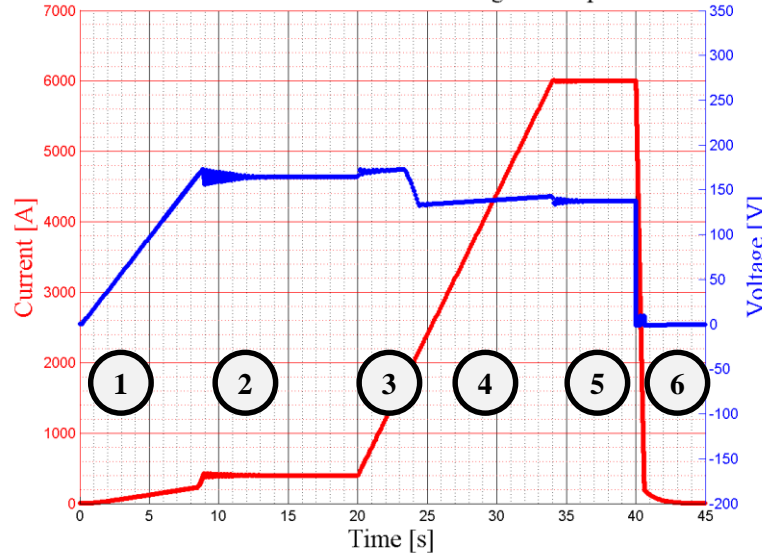
Sim 35 - Main currents in the circuit



Simulation of a quench in the RQ10 circuit, and evaluation of the impact of the change of the QPS threshold.

Simulation of the power cycle of the CSCM tests (Thermal Amplifiers), including diode-heating effects. Monte Carlo simulations assessing the impact of different randomly-distributed diode opening voltages.

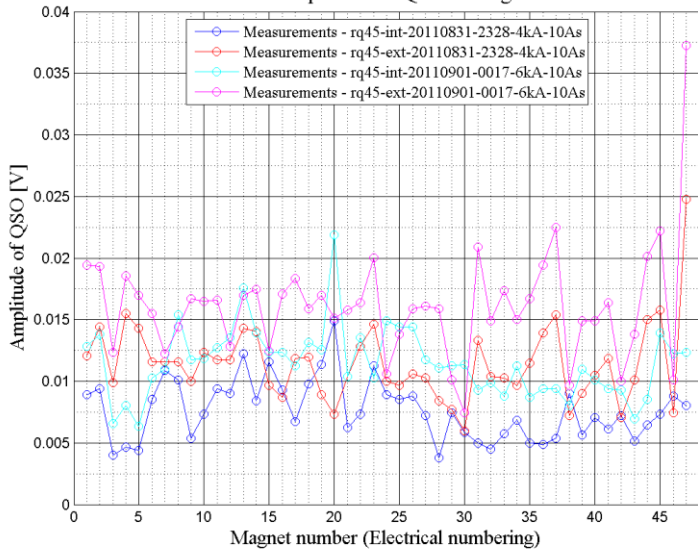
Sim32 - Main current in the circuit and voltage of the power converter



- ① $dV_{PC}/dt = 20 \text{ V/s}$
- ② $I_{DFB} = 500 \text{ A}$
- ③ $MIIT_{diode} > 3-6 \text{ MA}^2\text{s}$
 $U_{diode} 1.6 \text{ V} \rightarrow 1.2 \text{ V}$
- ④ $dI_{DFB}/dt = 400 \text{ A/s}$
- ⑤ $I_{DFB} = 6 \text{ kA}$
- ⑥ Fast Power Abort

Test campaigns

Maximum amplitude of QSO during the FPA



Amplitude of the U_QS0 signal after a Fast Power Abort in the RQF/D circuits.

Measurement of the Frequency Transfer Function of the available spare dipoles at cold and at different current levels in SM18.

Investigate whether the two apertures of some dipoles have a different behavior in frequency (unbalanced dipoles), and whether the transfer functions are current dependent as the modeling seems to suggest.

