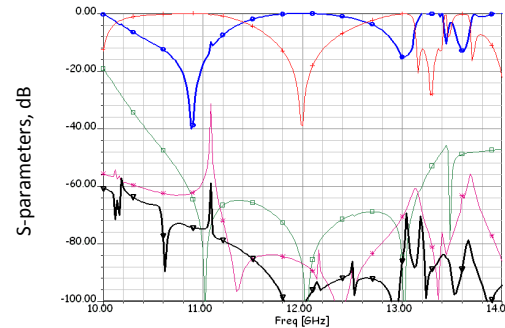
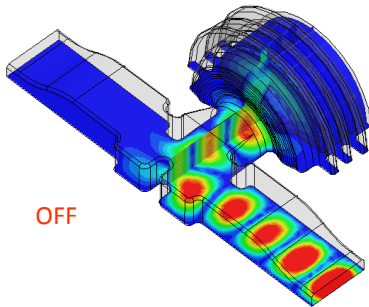
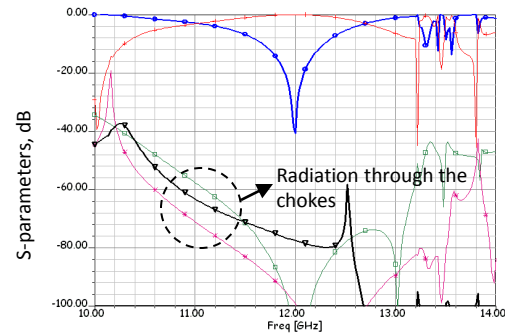
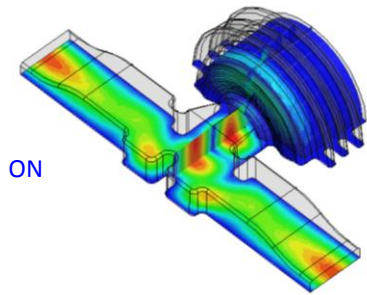
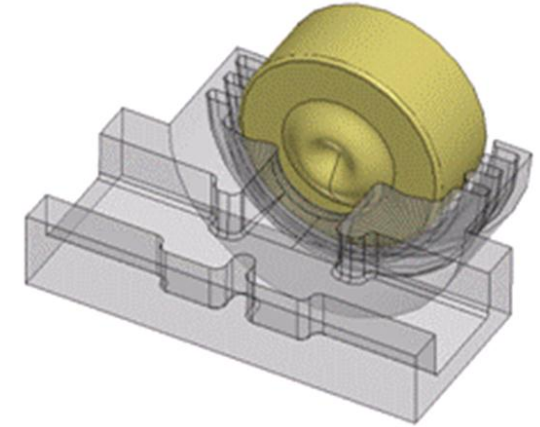
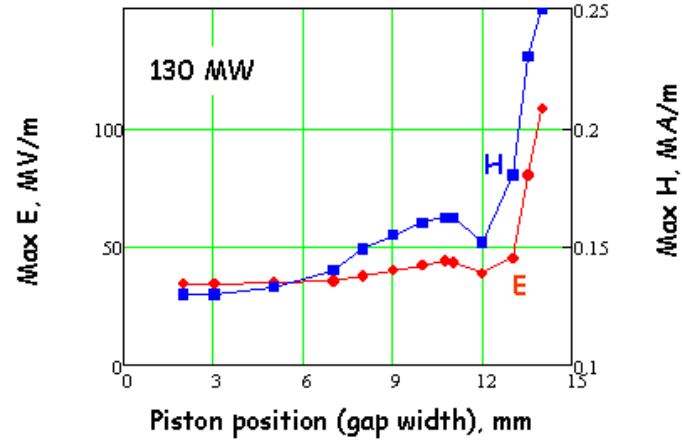
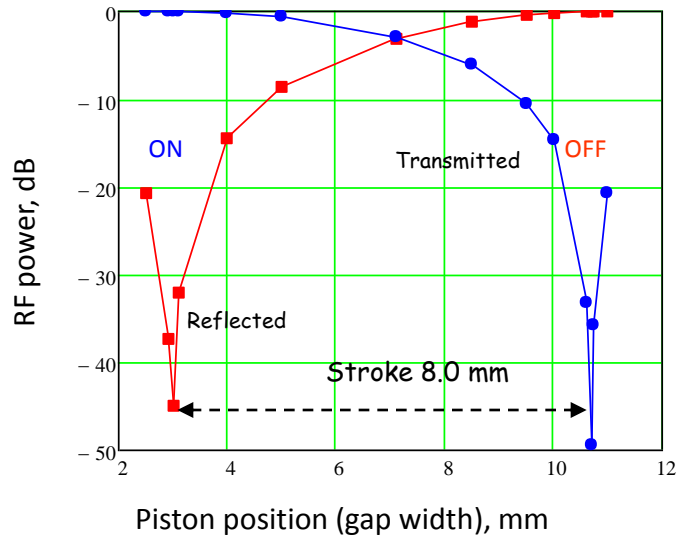
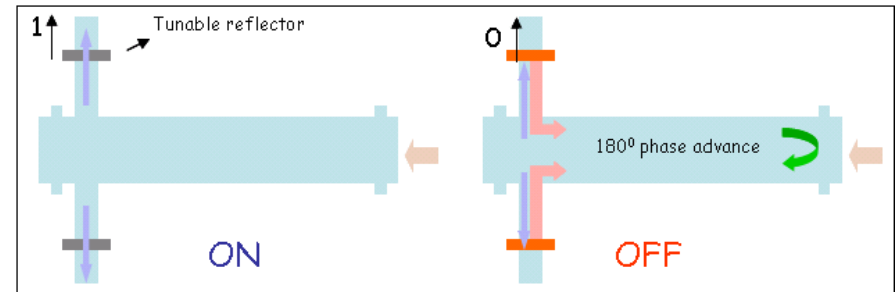


ON/OFF news

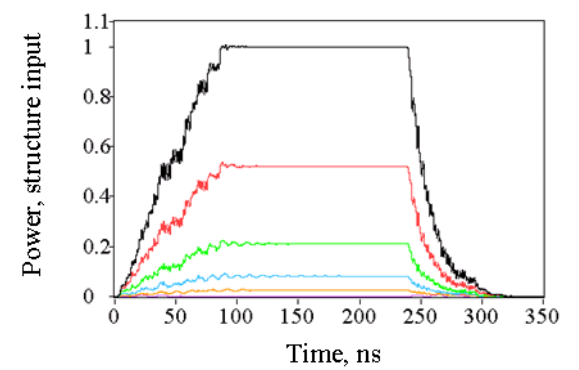
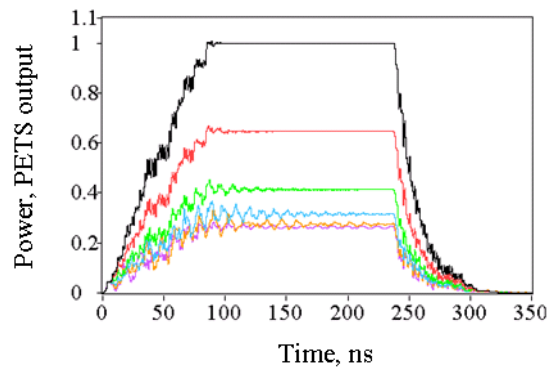
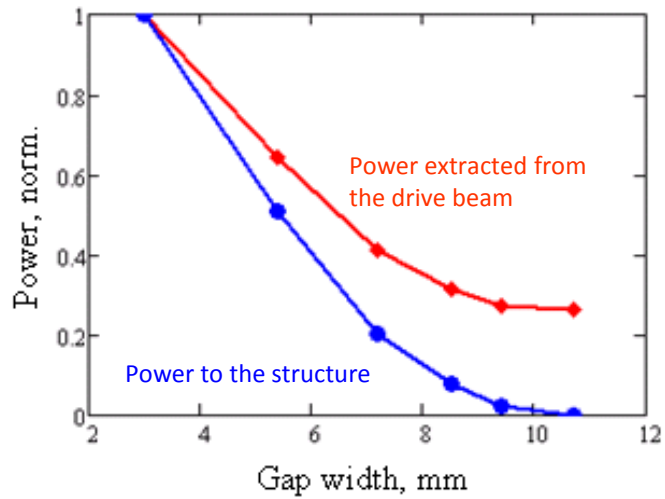
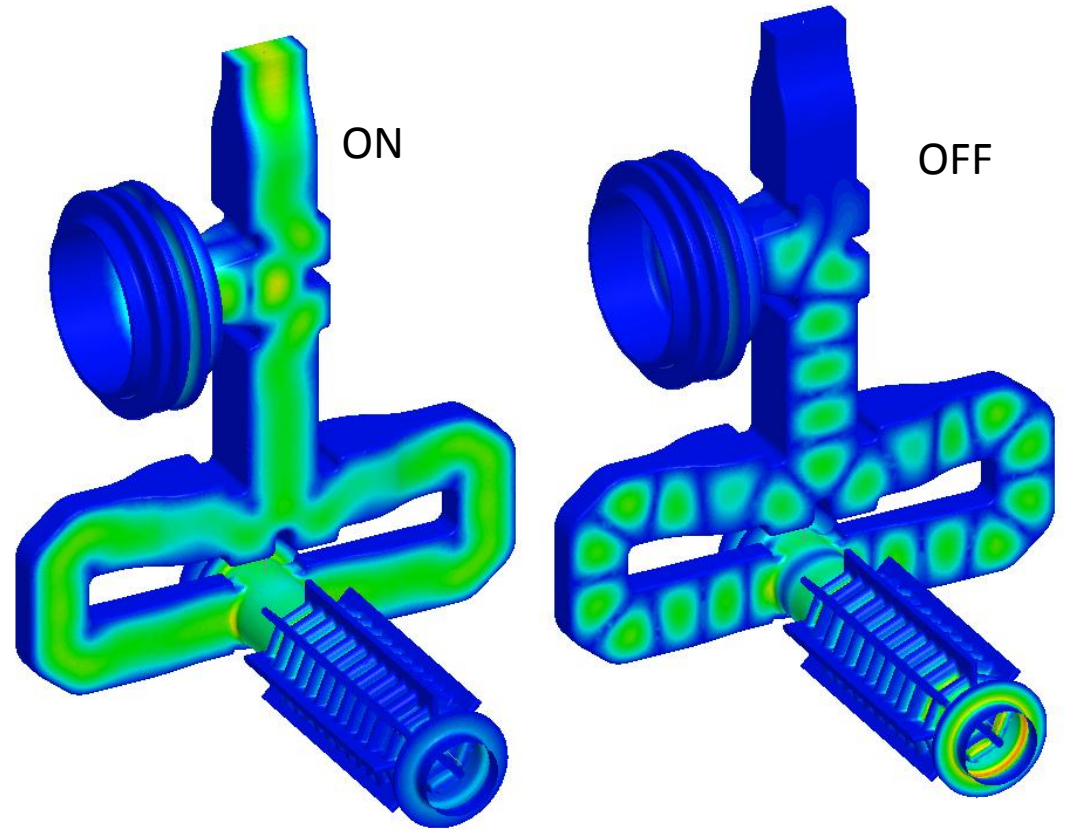
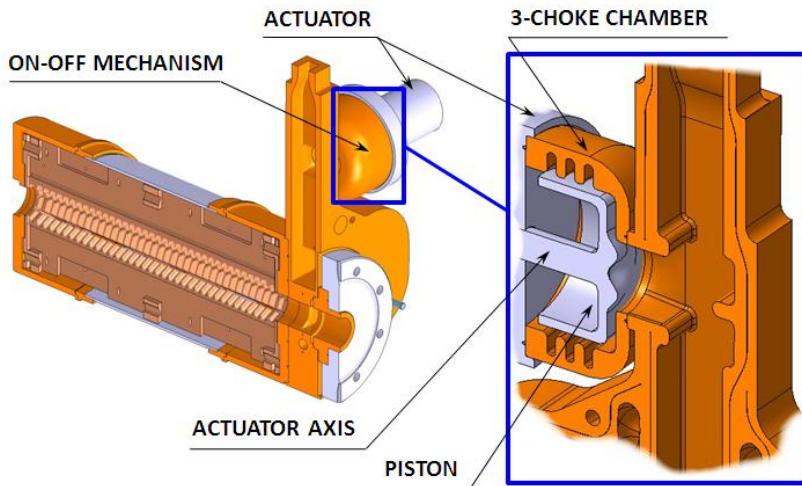
Compact design of the high RF power variable (mechanically) reflector



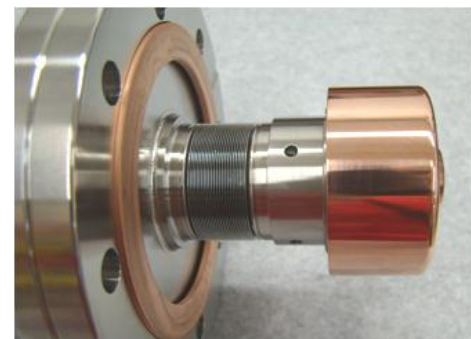
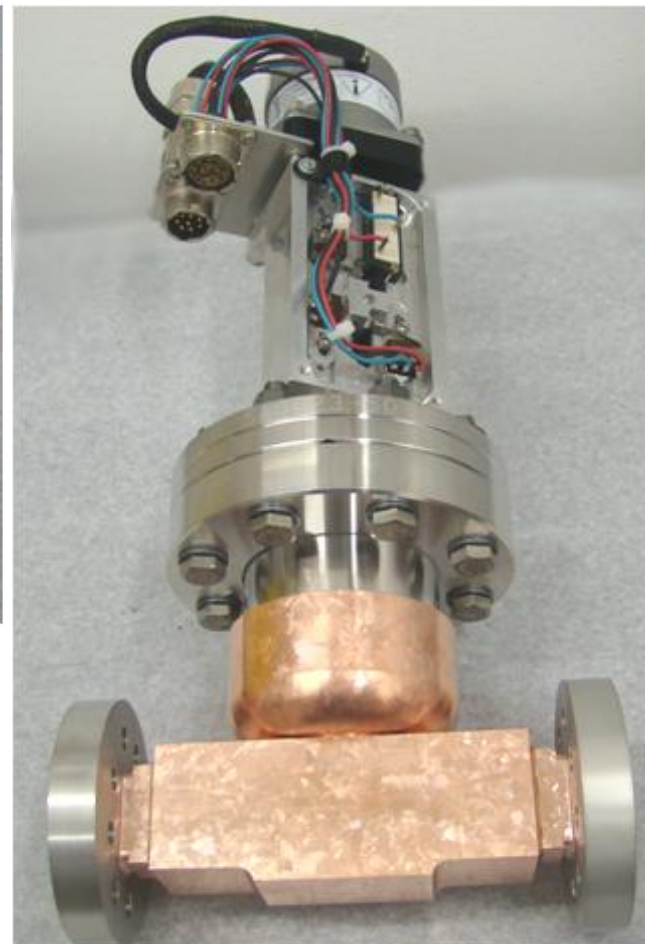
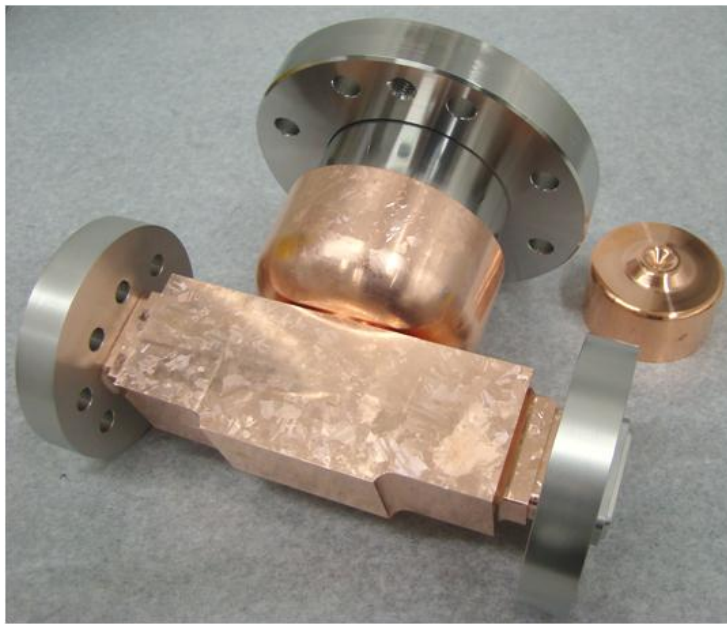
The variable reflector is a core element of the PETS ON/OFF mechanism. It is activated when the local termination of the RF power production in PETS is required.



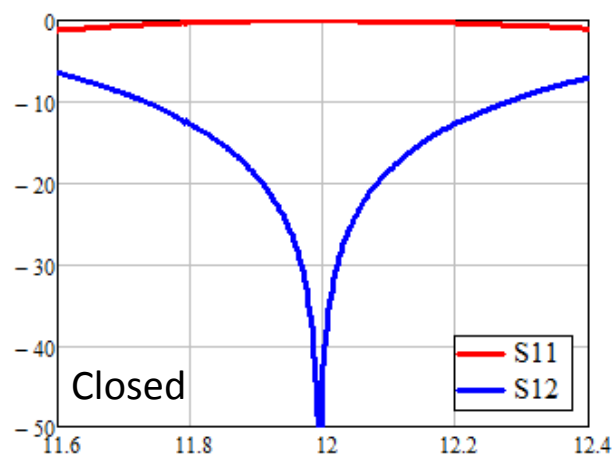
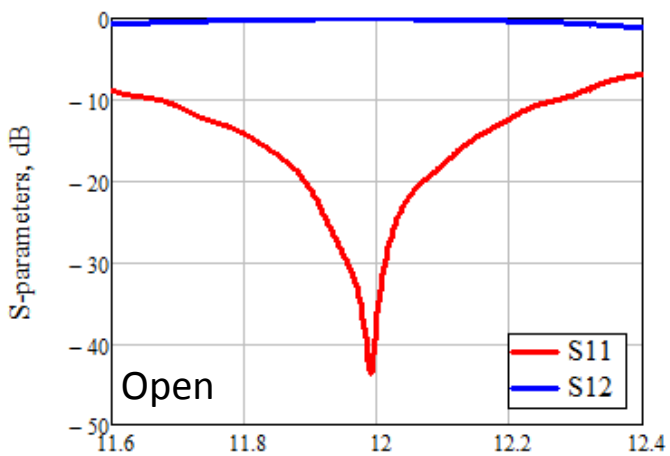
PETS ON/OFF operation (CLIC PETS)



Broadband high RF power variable reflector prototype



RF measurements

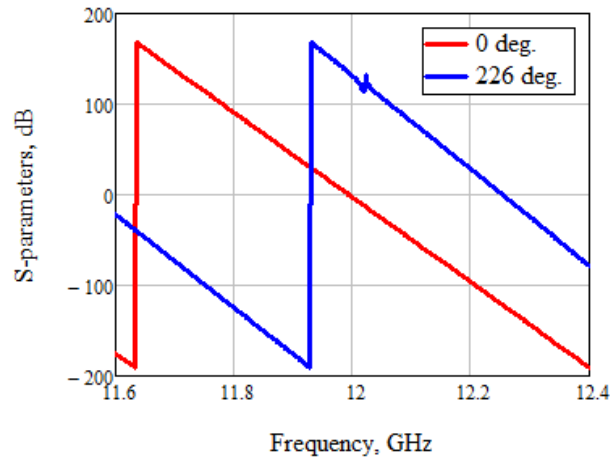
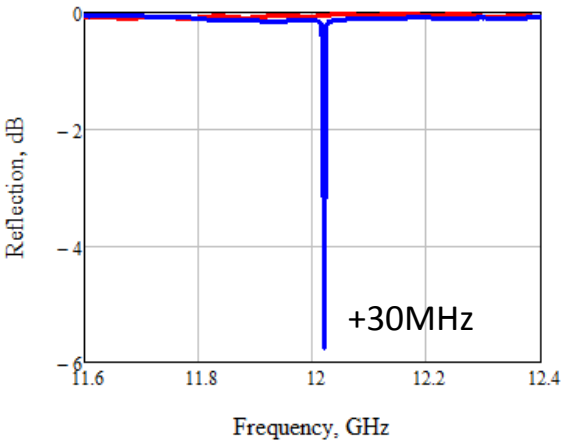
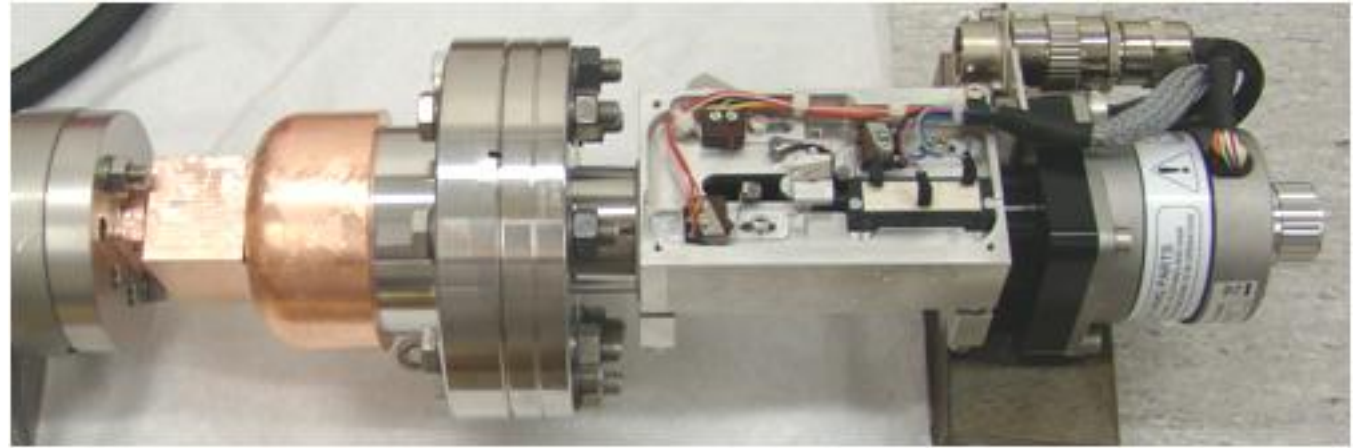


Frequency, GHz

← Stroke 8 mm →

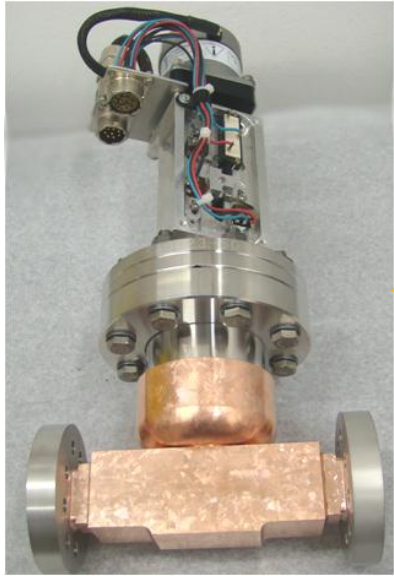
Frequency, GHz

High power variable short circuit

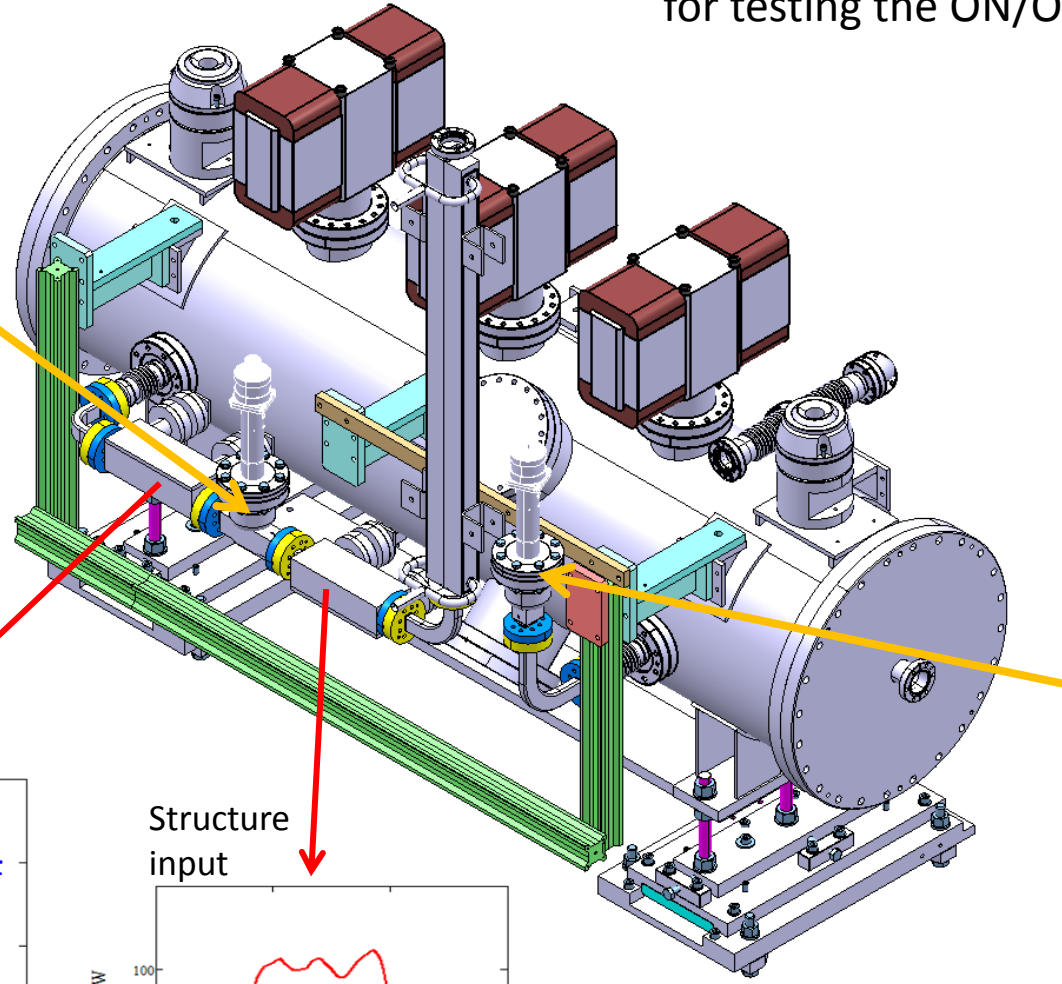


Originally the reflector was designed to provide reliably the 180° phase advance. The dynamic range was increased up to about 220° by further movement of the piston, until the chamber resonance became a danger.

Variable reflector (for tuning the recirculation coupling)

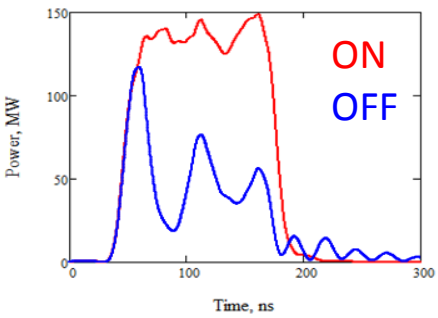


TBTS PETS layout with internal recirculation for testing the ON/OFF concept.

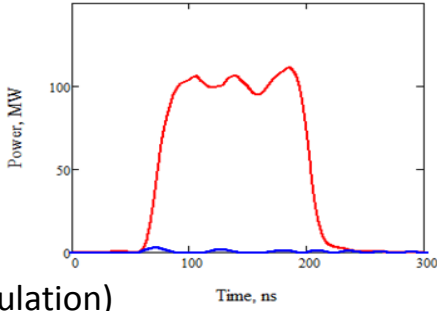


Movable RF short circuit (for tuning the resonant length)

PETS output

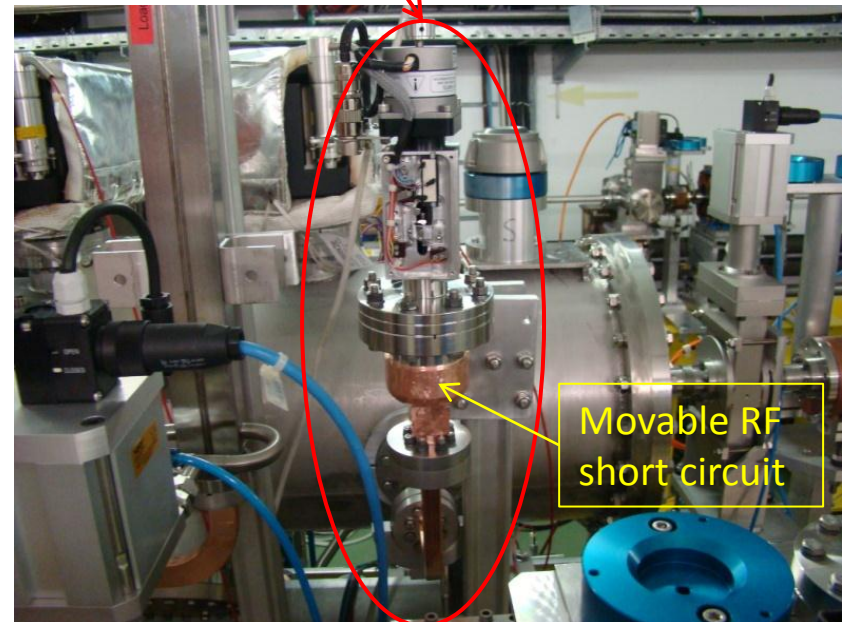
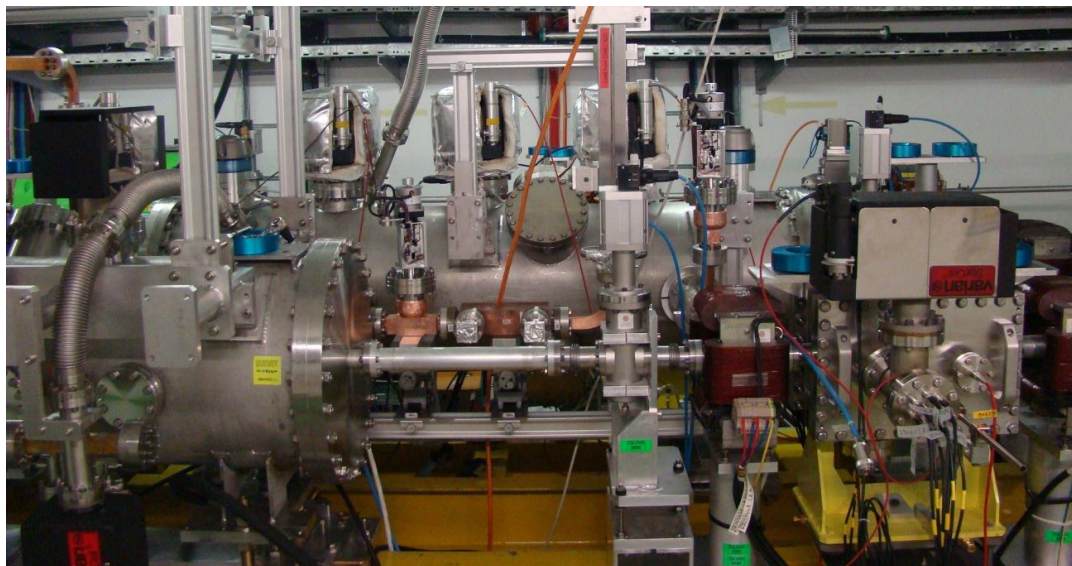
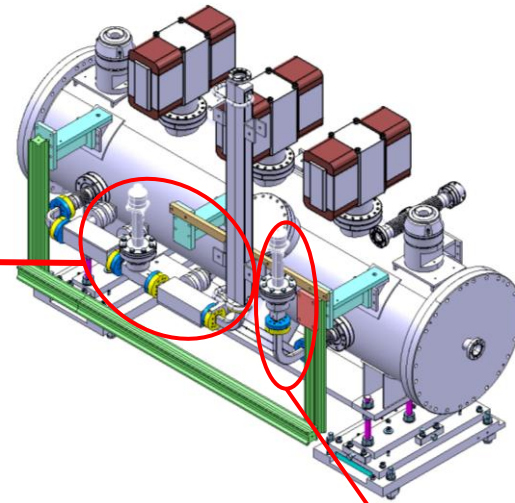
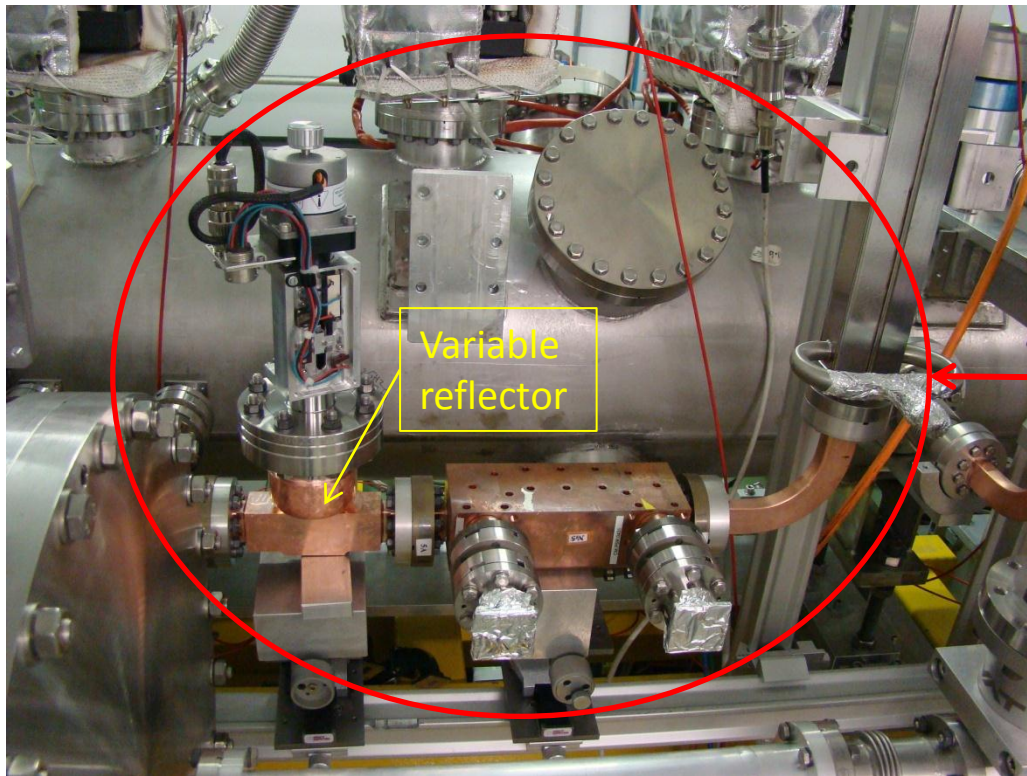


Structure input



(as predicted by computer simulation)

The components have been installed on the PETS tank.



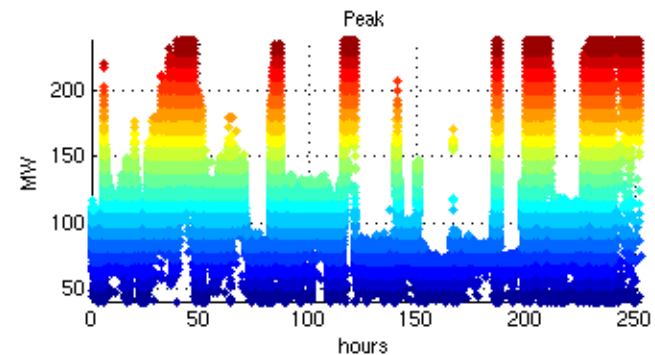
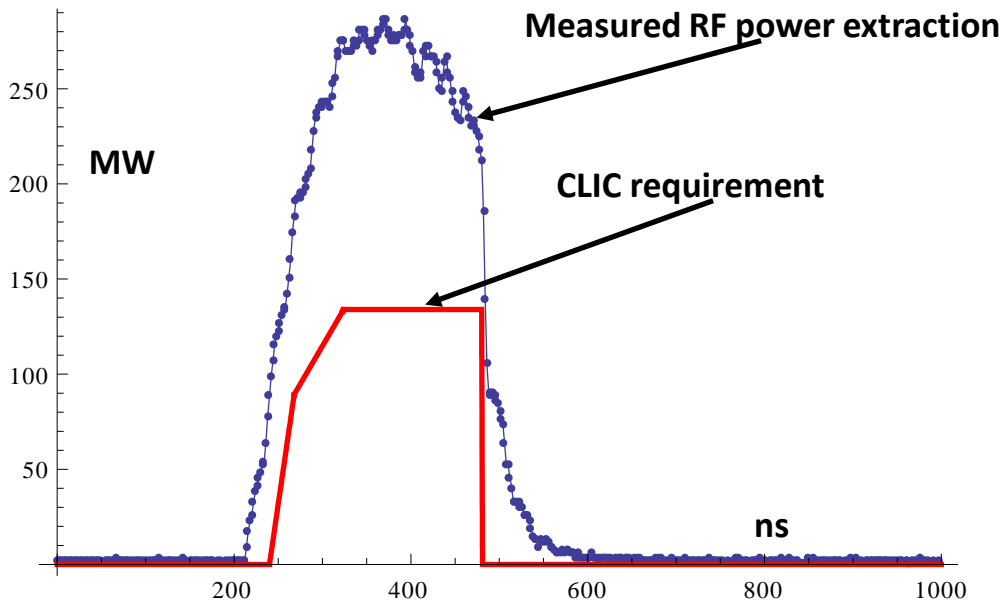
Few words about TBTS results during the past testing period

Chat in a corridor:

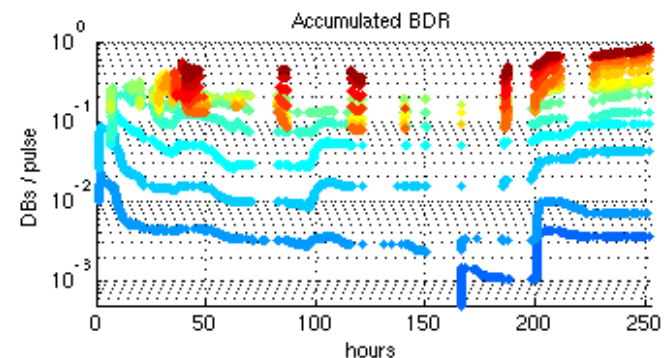
Igor... *'Roberto, why do we need to run PETS with power levels above 200 MW?'*

Roberto... *'Well, it works, so why do you ask? As well we have showed 150 M/m.'*

It did, indeed! With $BDR > 0.3$ when peak power was > 200 MW!

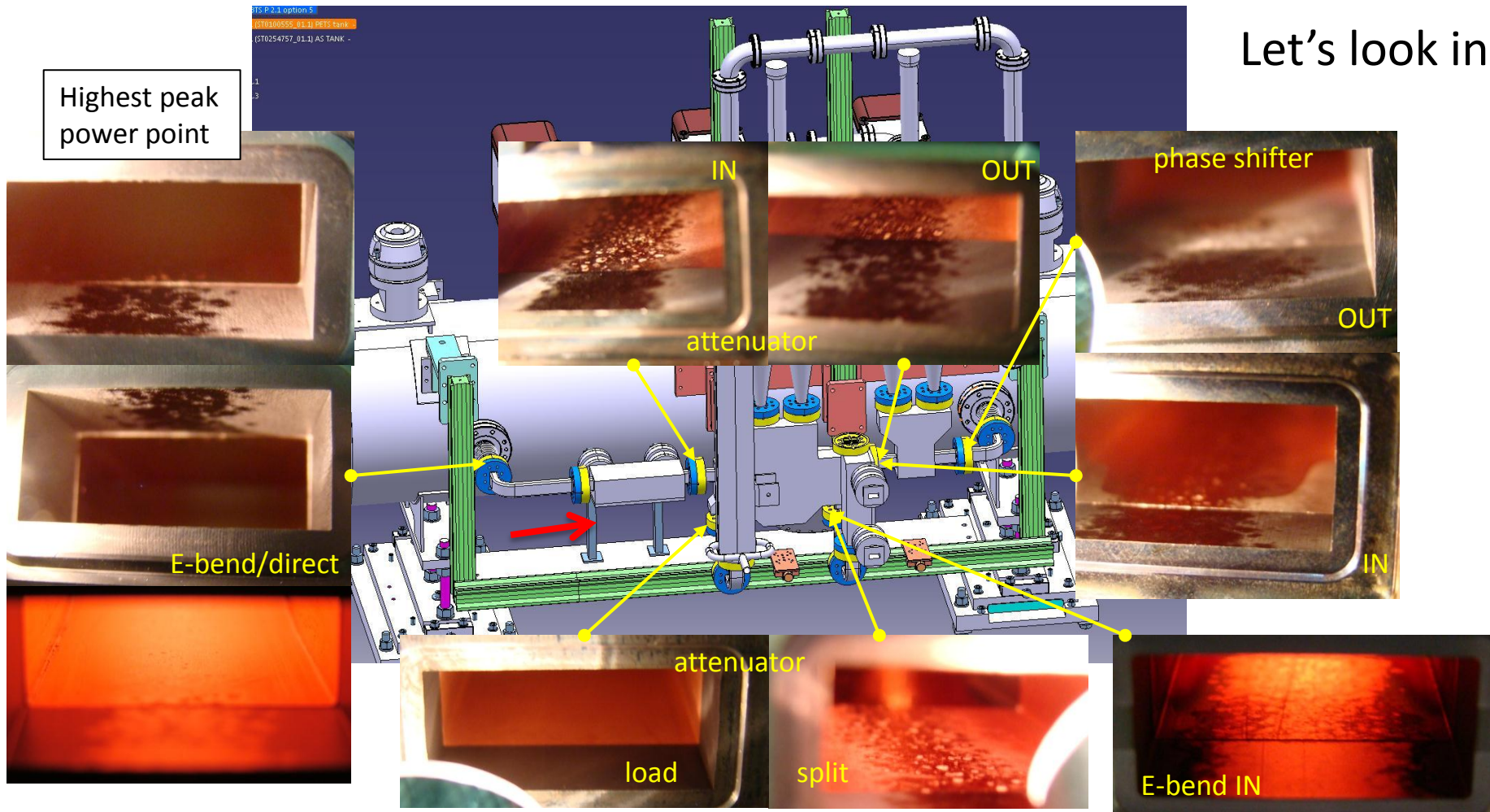


Peak power in the PETS



BDR in recycling loop

Let's look inside



Observations:

- All the stainless steel flanges show sort of breakdown erosion on the surface.
- The copper surfaces in attenuator (GYCOM) are seriously damaged in ALL the channels.
- In the phase shifter (also made by GYCOM) copper surface is pretty clean.