

VALEN MODEL OF FIRE

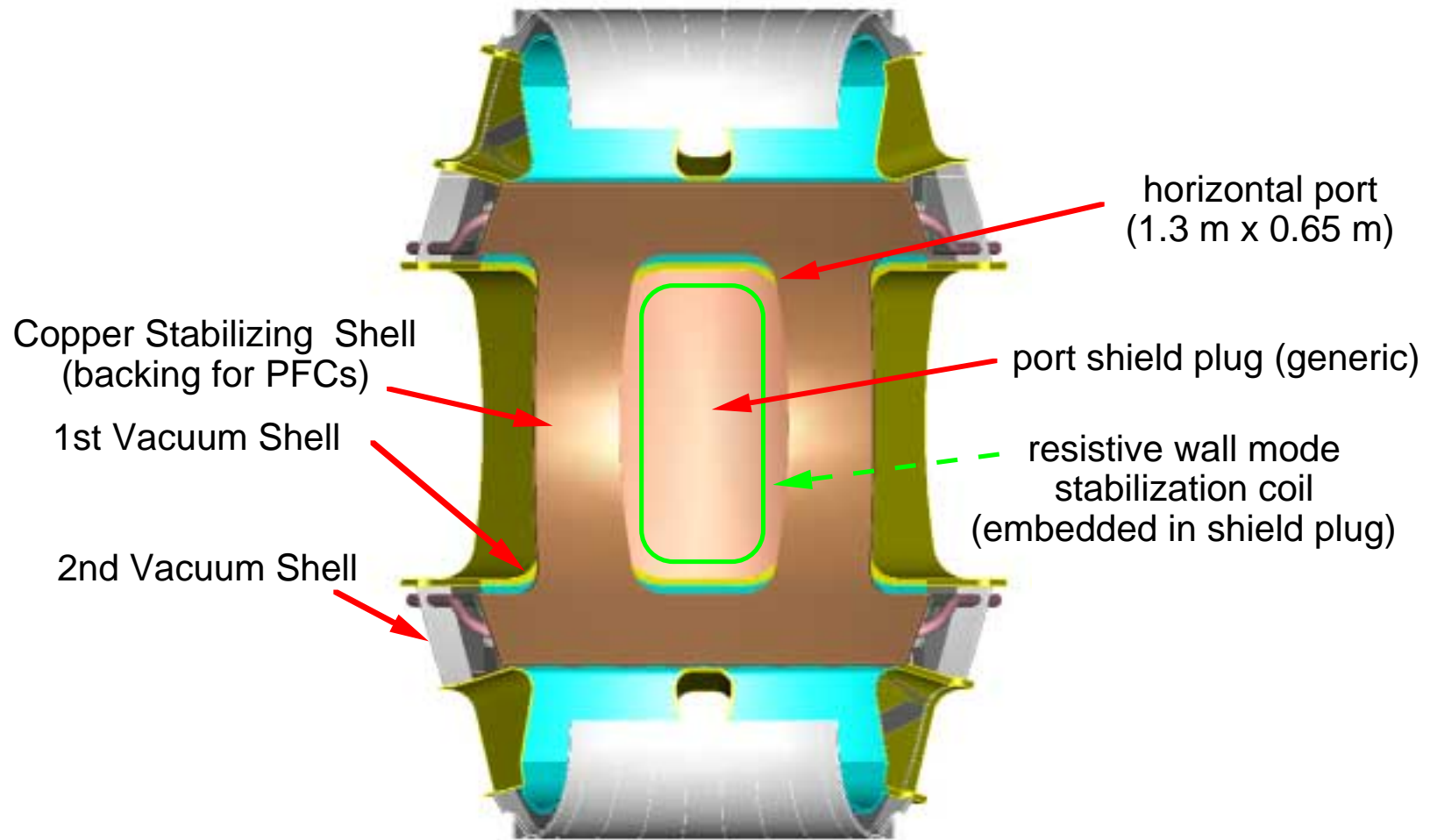
FEEDBACK CONTROL COIL SET

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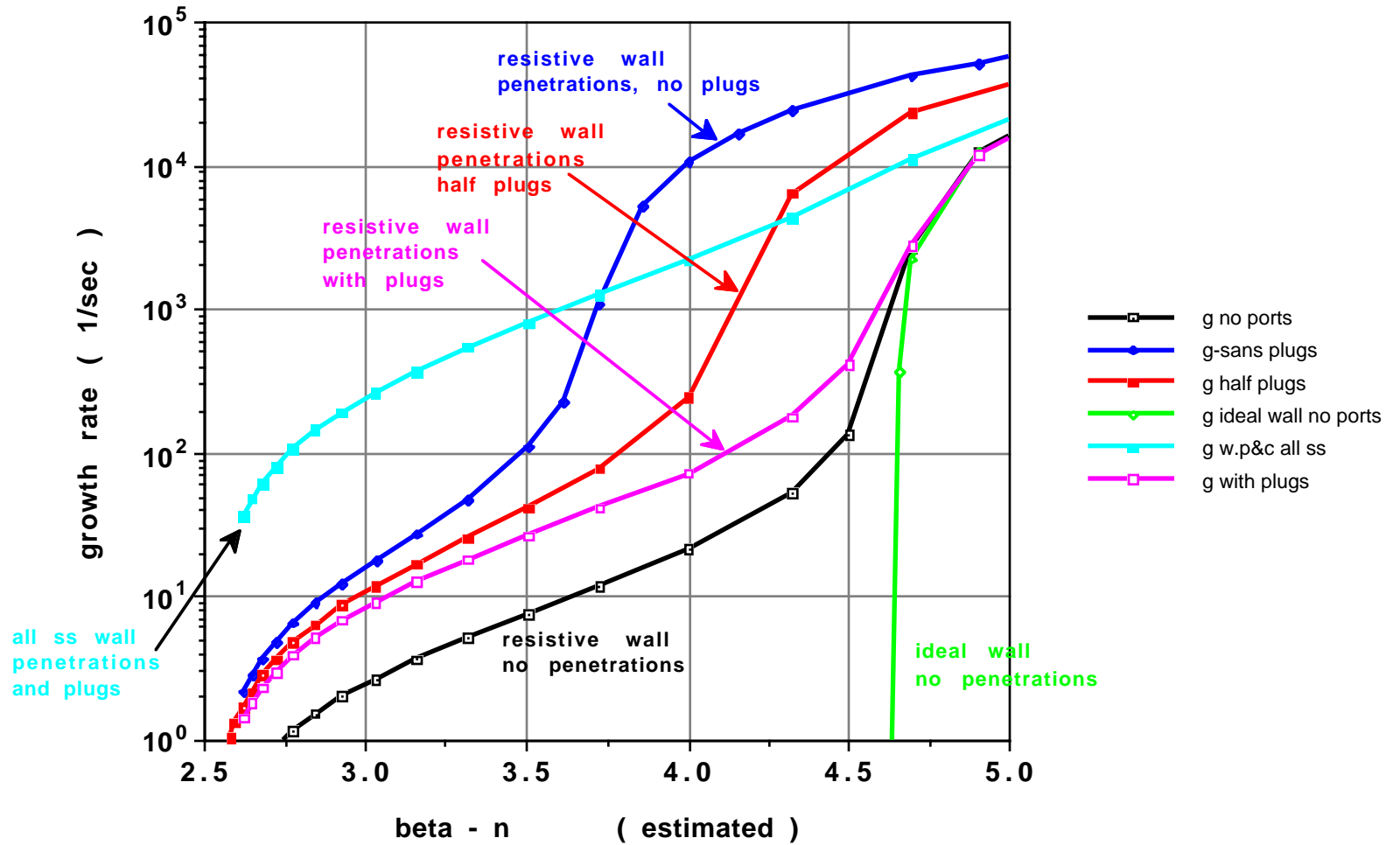
2002 Fusion Summer Study
Snowmass, CO
10 July 2002

Optimizing Resistive Wall Mode Control in FIRE

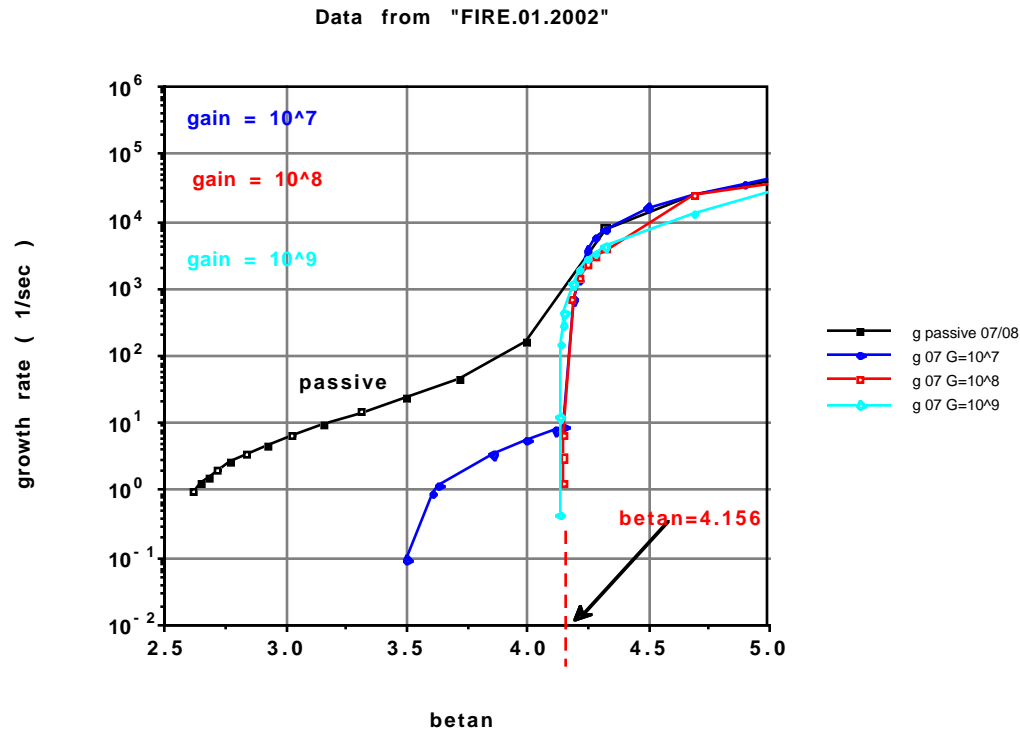
view of horizontal port front looking from plasma side



**VALEN prediction
passive behavior of different FIRE models
Data from "FIRE.APS"**



VALEN Model of FIRE Active Mode Control: Four Control Coil Pairs Reach Ideal Wall Limit



- Feedback modeled using “Mode Control” Scheme with Poloidal Field Sensors on Mid-Plane weakly coupled to Control Coils.
- Control Coils Located in 8 of 16 ports (4 n=1 coil pairs).
- **Same effectiveness as 8 coil pairs using all 16 ports!**
- **Stable beta reaches 80% of continuous wall Ideal Kink Limit!**

