TUPP073

STUDY OF THE ACS CAVITY WITHOUT A BRIDGE CAVITY

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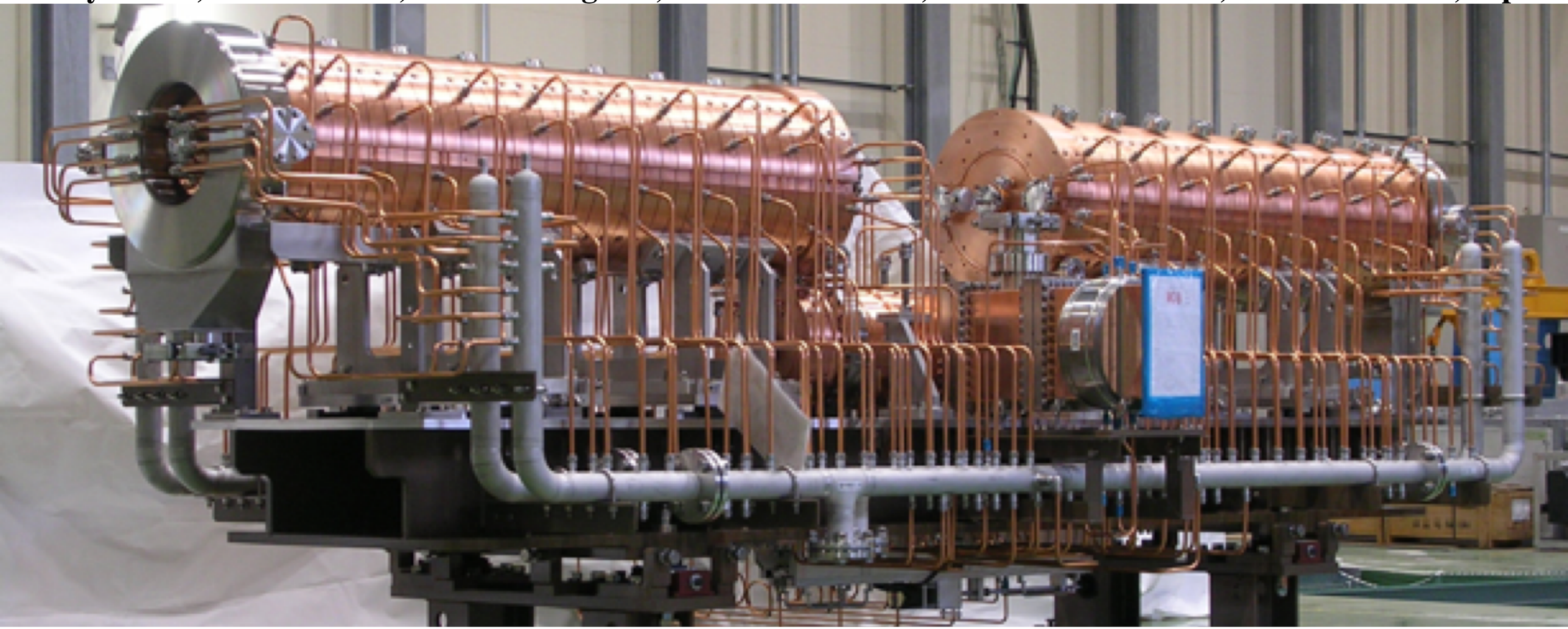
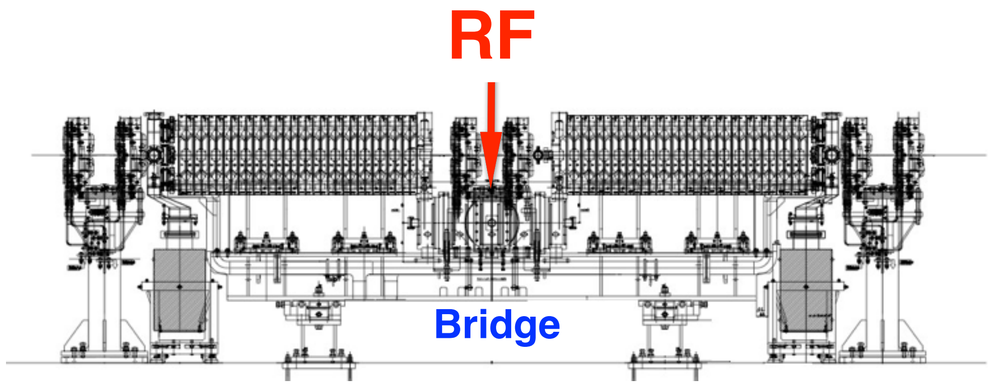
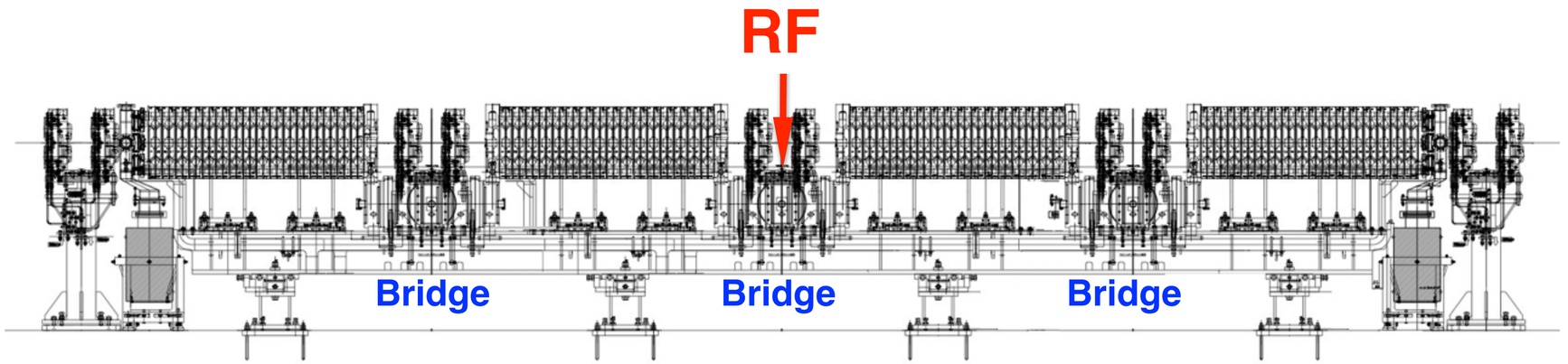


Photo : J-PARC standard module of the ACS linac -> We propose the alternate structure of ACS

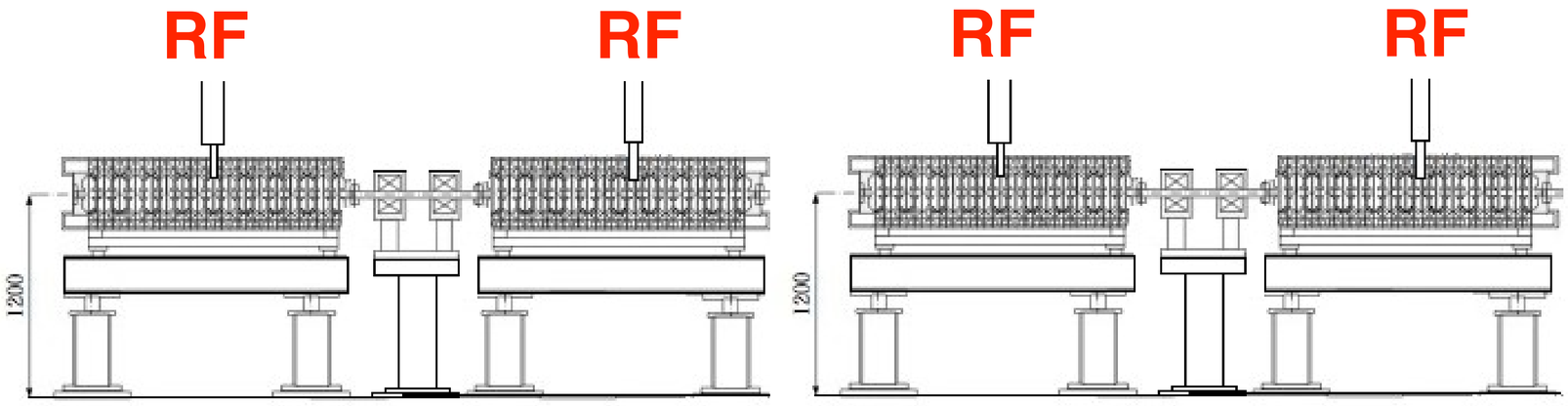
Comparison of the ACS schemes



J-PARC ACS module



Multi tank ACS module with bridge cavitiess



Proposed ACS tank without a bridge cavity

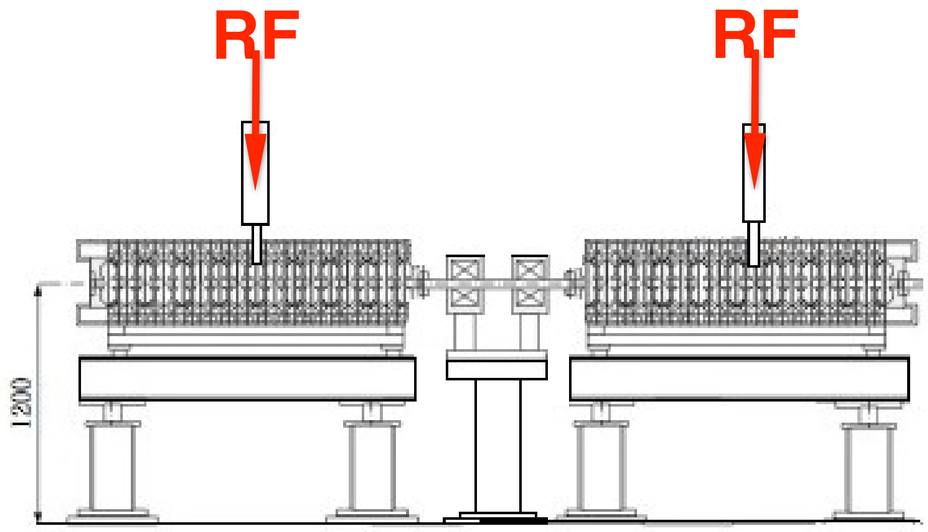
Merits & demerits of the ACS without a bridge cavity

Merits:

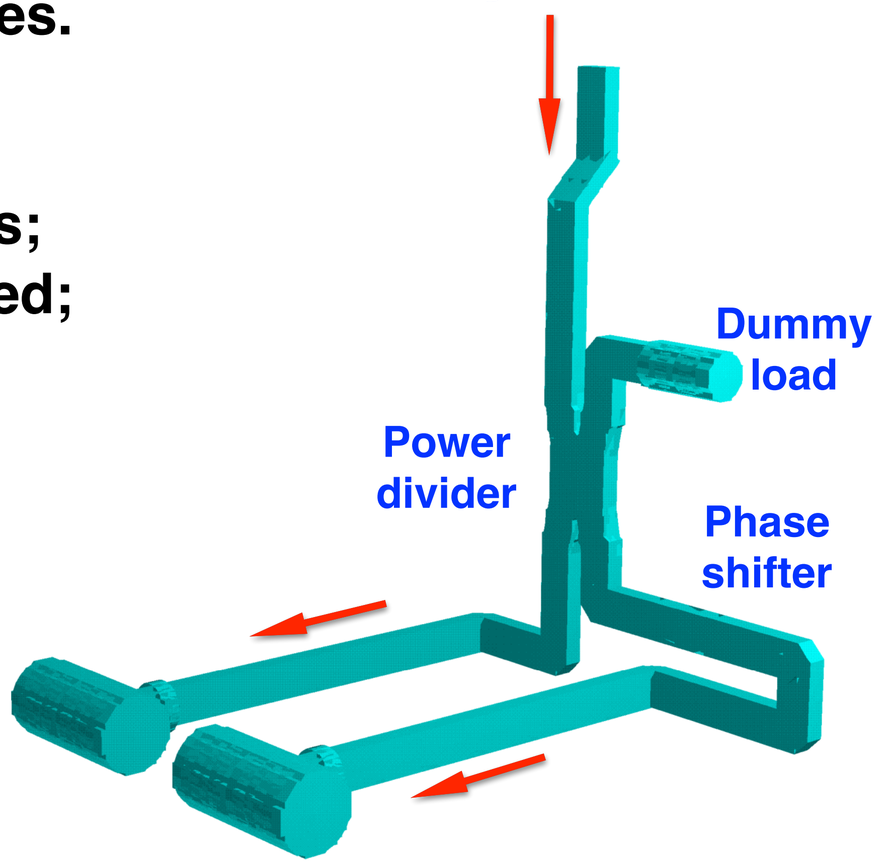
1. a cavity assembling is much easier;
2. an alignment of the tank is much easier;
3. cavity installation is much easier;
4. RF power load for the input coupler decreases.

Demerits:

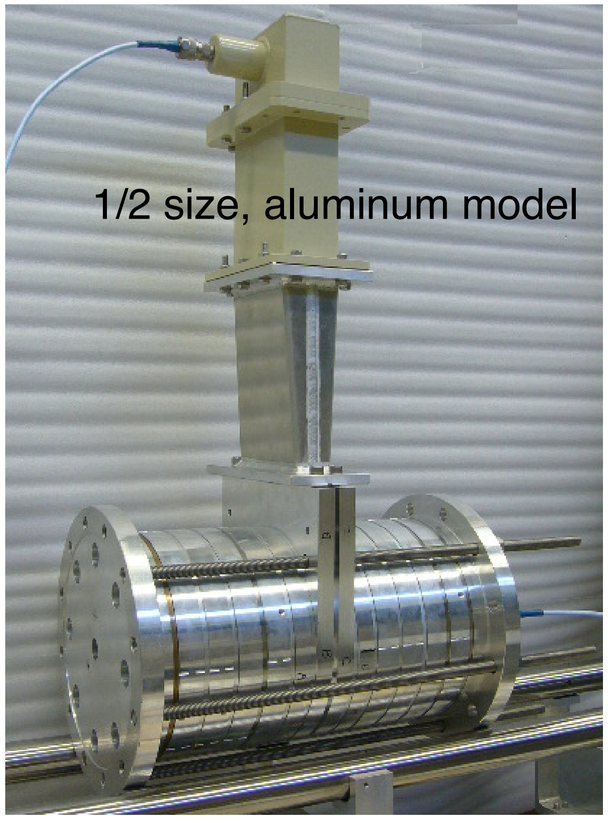
1. a number of the cavity to be tuned increases;
2. a phase shifter & a power divider are required;

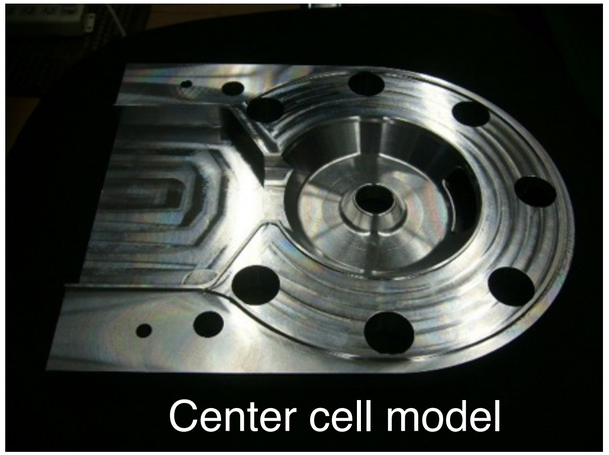


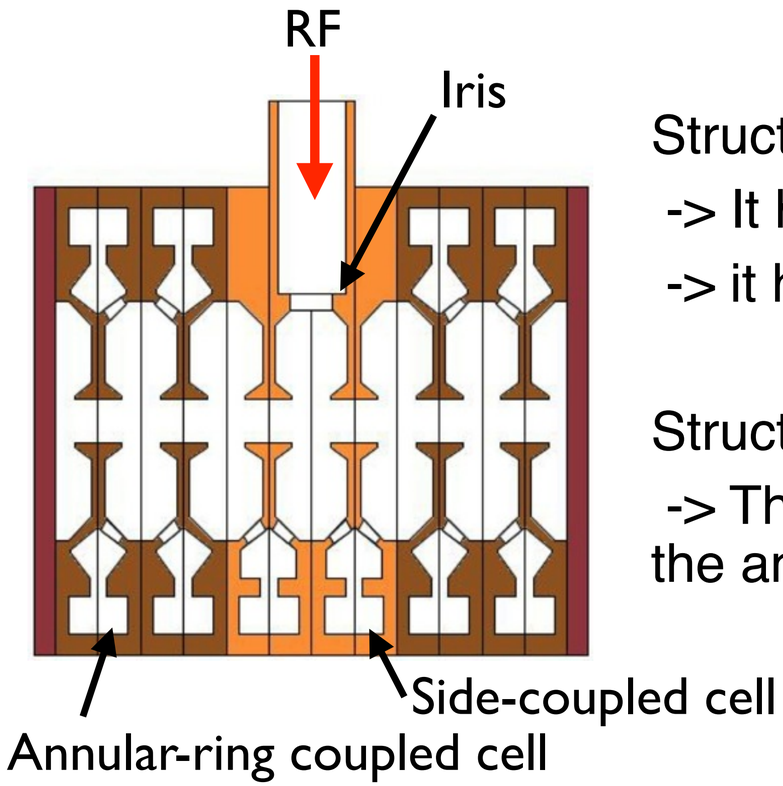
Example of the waveguide system



Model study of the ACS







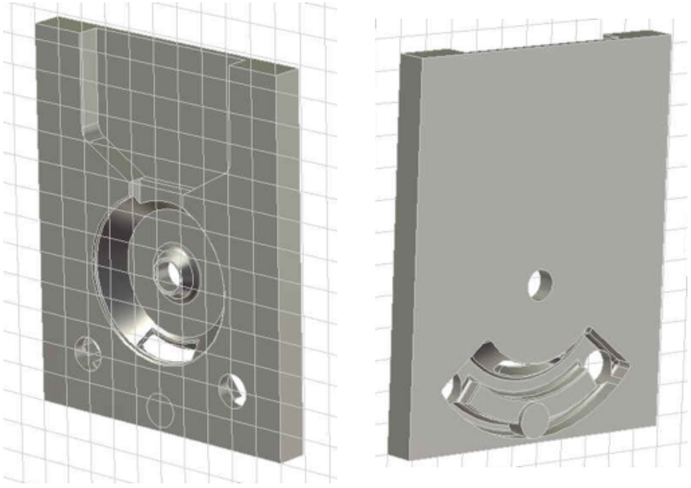
Structure of the center cell:

-> It has a iris for rf input

-> it has side-coupled cells

Structure of the neighbor accelerating cells:

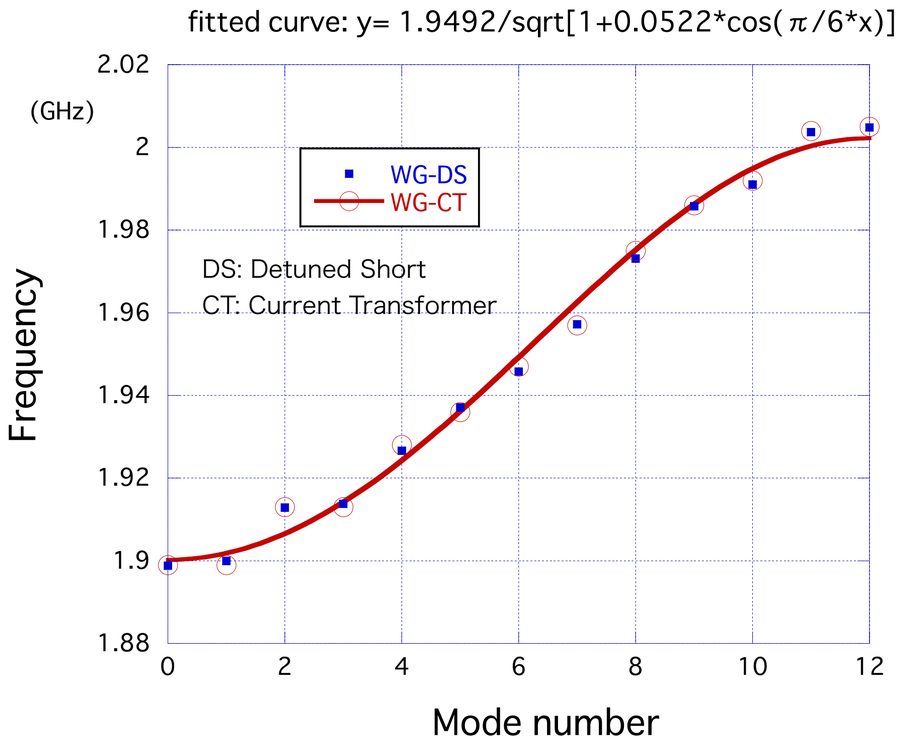
-> They have the side-coupled cell and also the annular coupled cell.



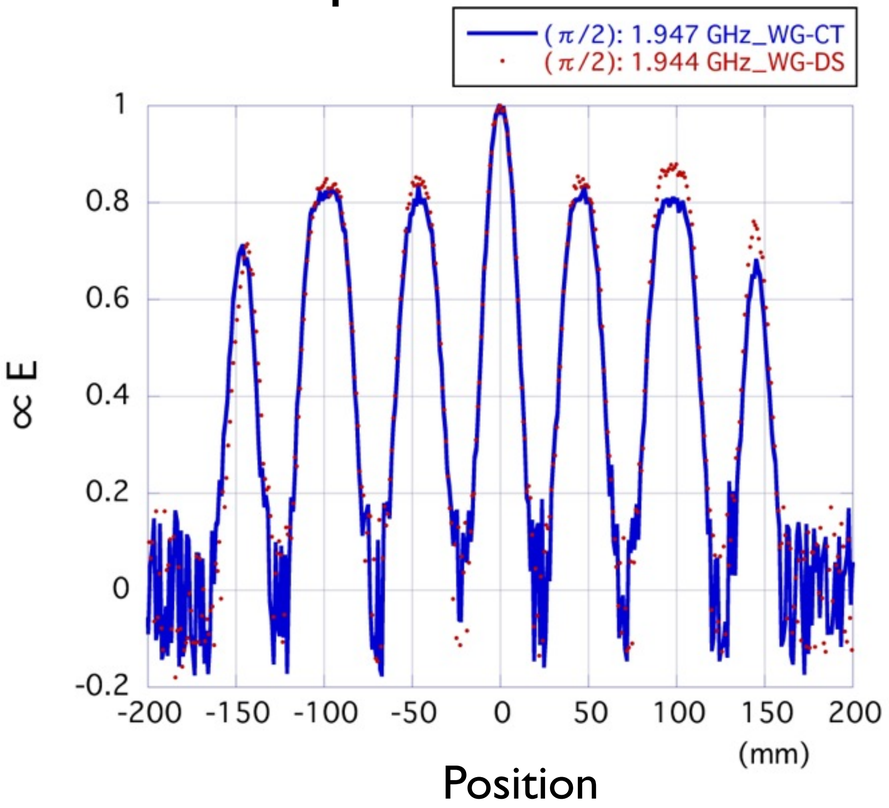
Designs of the Input iris and coupling slots has been fixed by using Microwave studio

Examples of measured data for the model

Dispersion curve



Bead-pull results



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Let's discuss for this cavity.