

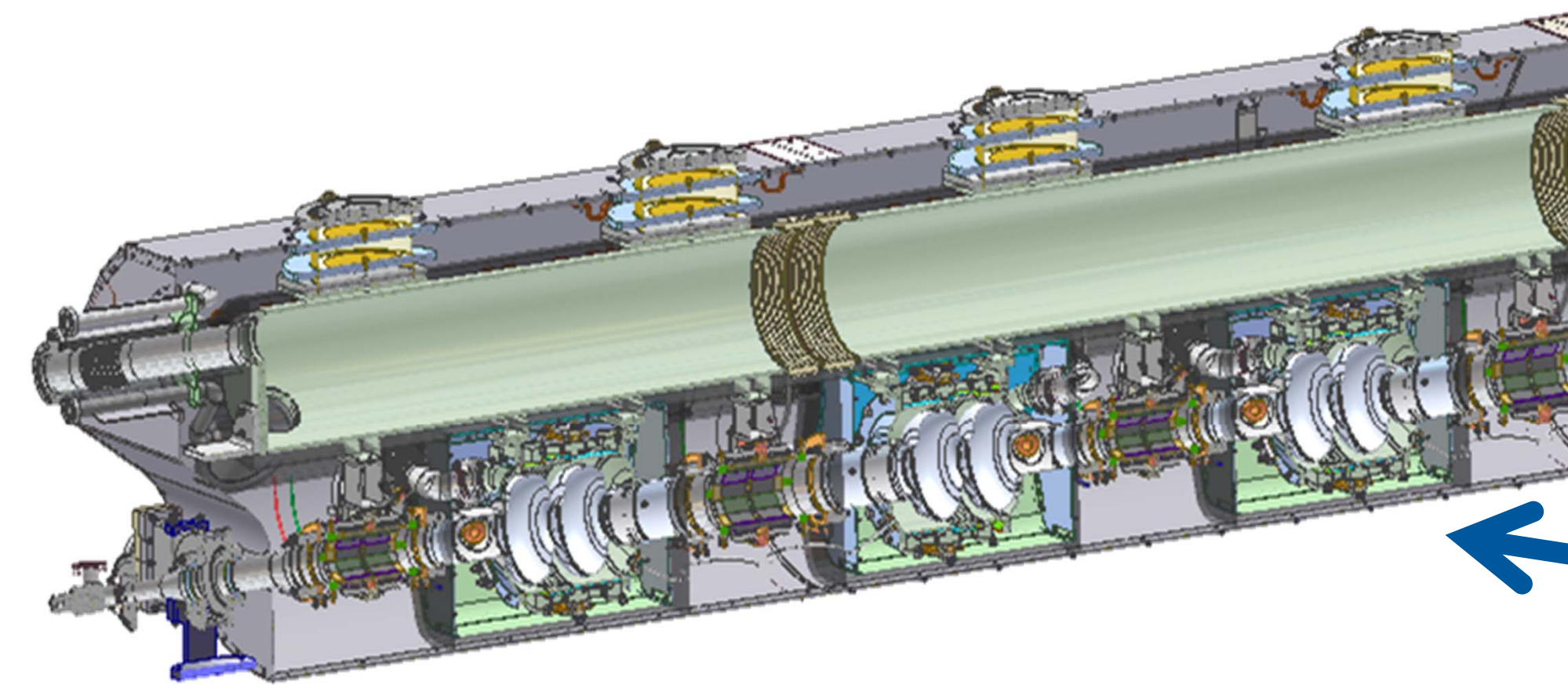
RF AND SRF COMPONENTS FOR BERLINPRO

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Energy	~ 50 MeV
Merger energy	~ 6.5 MeV
Beam current	100 mA
Emittance	1 mm mrad (normalized)
Electron source	superconducting RF photo injector
Gun transmitter	270 kW 1.3 GHz
Booster cavities	3 x 2-cell
Booster transmitter	2 x 200 (270) kW + 1x 15 (200) kW
Linac cavities	3 x 7 cell
Linac transmitter	3 x 15 kW

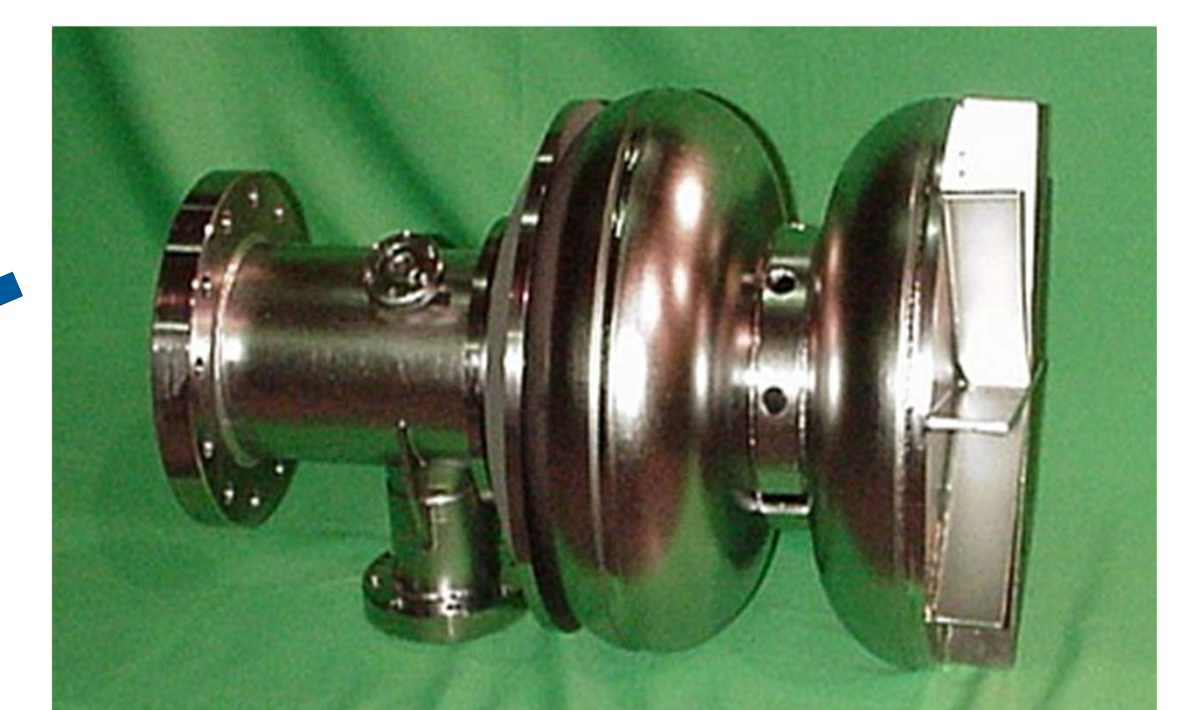
Basic parameters of BERLinPro.



BERLinPro booster module is planned to be based on the Cornell module seen on the picture. Number of 2-cell cavities will be reduced from 5 to 3 and it is planned to use cERL couplers instead of Cornell couplers for higher power capacity



cERL fundamental power couplers on the coupler test stand. They are the candidates to be used at the photo injector and the booster cavities



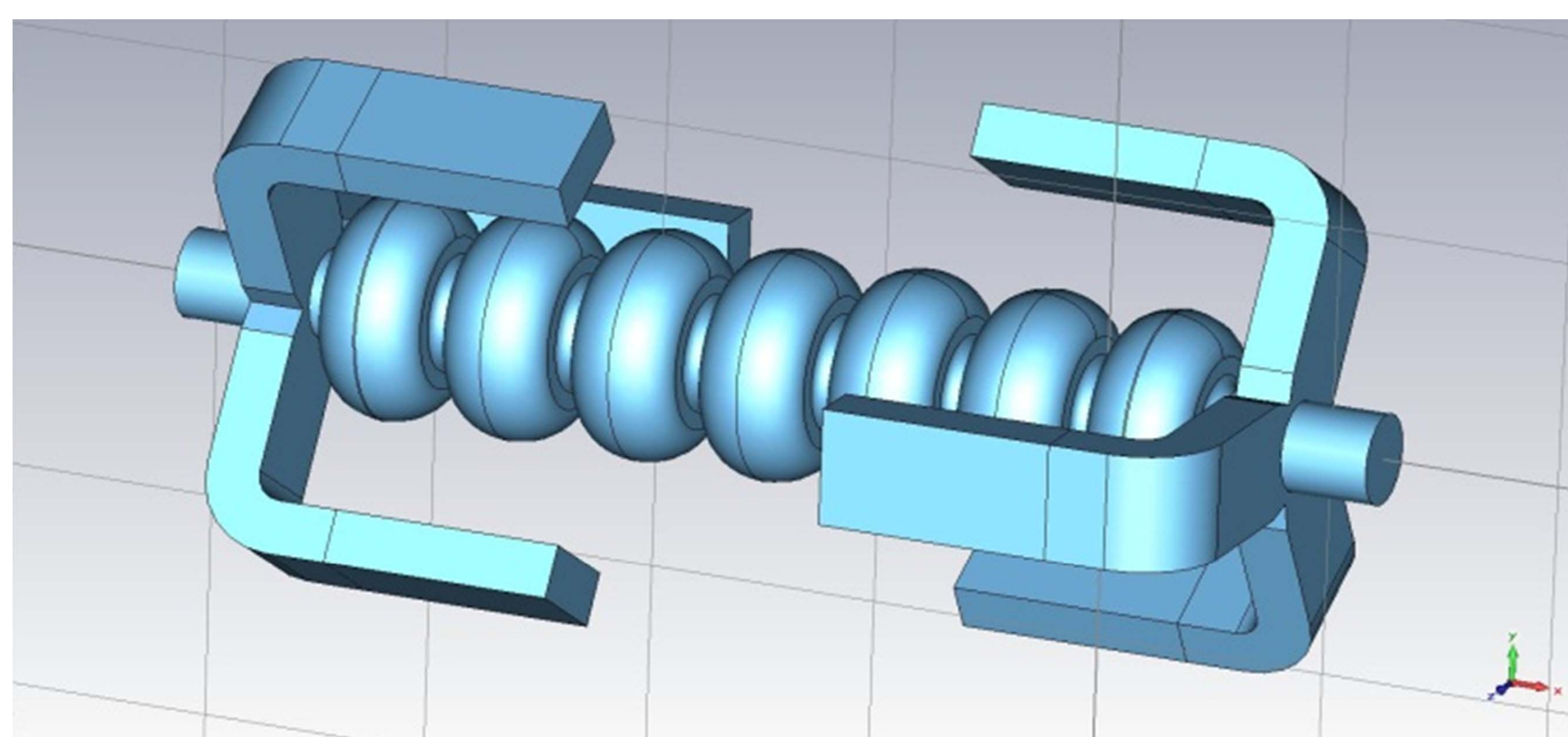
Stage-0 SRF photo injector cavity cell

3 x 2 cell cavity, 4.5MeV@100mA

1.5-2MeV@100mA

3 x 7 cell cavities, 44MeV
50MeV, 100mA
1 mm mrad (norm), 2ps

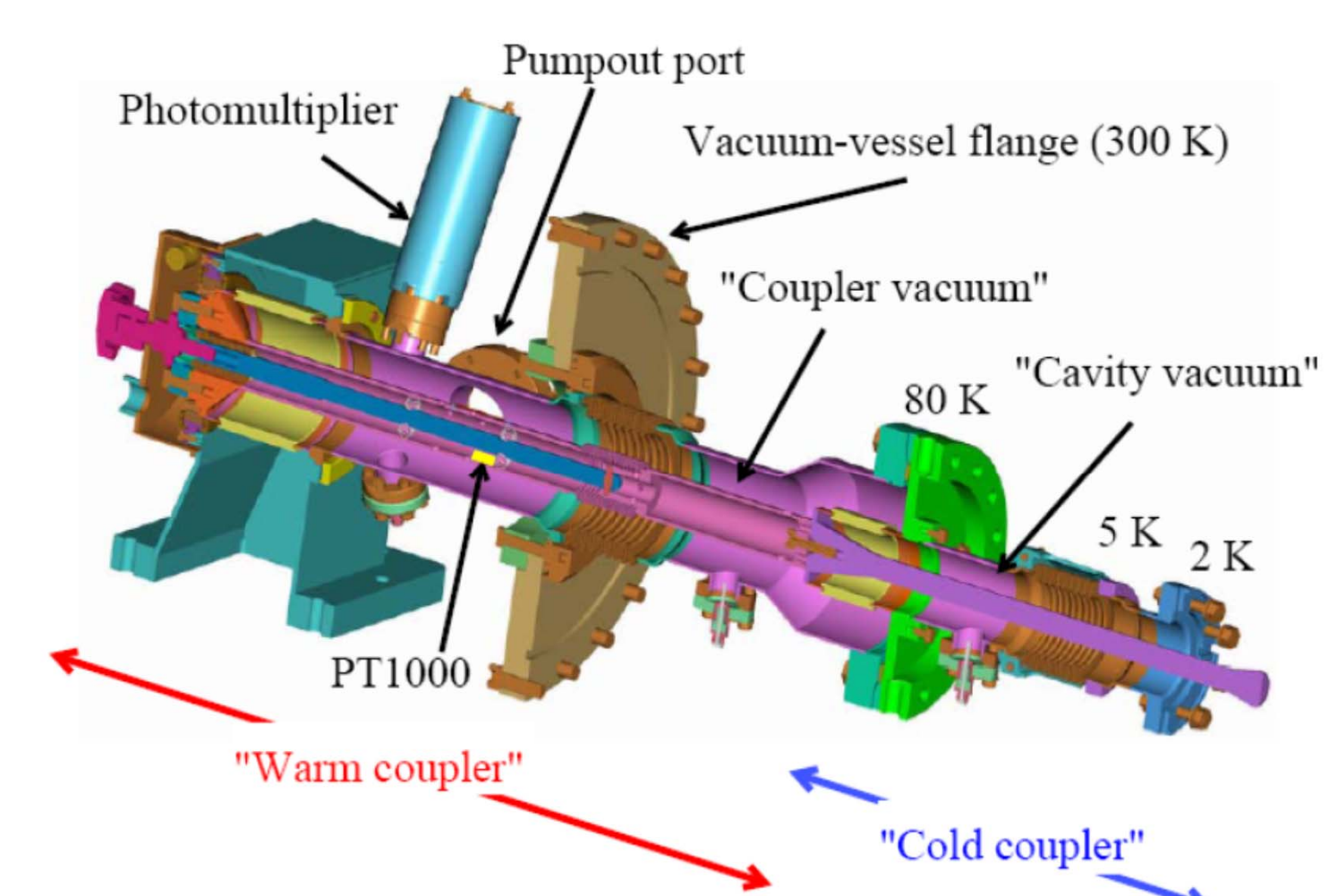
Layout of BERLinPro



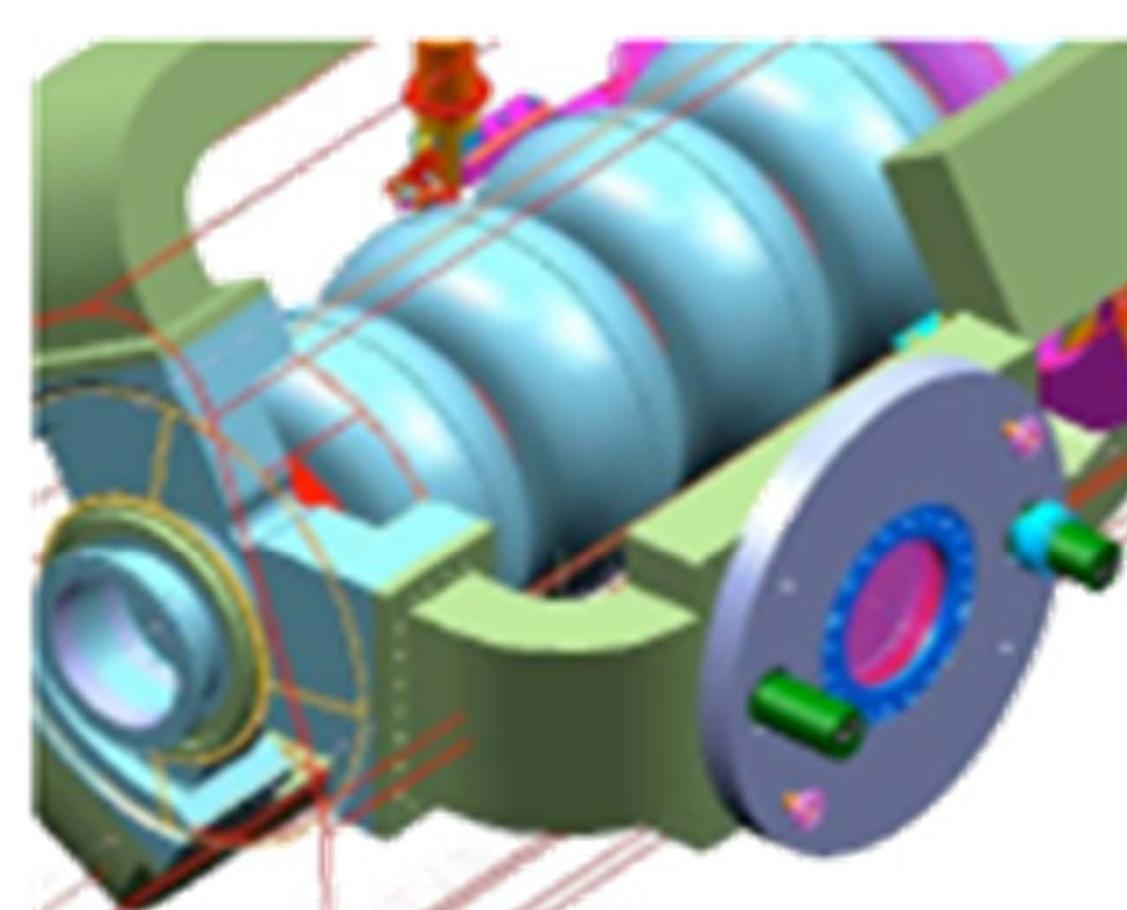
First outline of a 7-cell cavity with waveguide HOM dampers (courtesy B. Riemann)
Decision is open to use waveguide or coaxial fundamental power coupler



The 80 kW IOT based transmitter used at the MLS. This transmitter is used as prototype for the klystron-based 270 kW transmitters for the injector cavities at BERLinPro.



Coaxial fundamental power coupler, one possibility to use at the linac cavities



Waveguide fundamental power coupler (CEBAF), one possibility to use at the linac cavities

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