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Mock-up assembly of an SRF module: space frame as tooling and structural support for highly HOM-damped cavities

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To support the VSR cavities with five protruding waveguides, a space frame was engineered to serve a dual purpose: providing structural support and functioning as tooling during assembly. This space frame facilitates cavity rotation in the cleanroom, simplifying the installation of HOM loads and fundamental power coupler components. Designed specifically for the particular cavity geometry, the space frame has a diameter of about 1500 mm and provides axial and radial support for the cavity, along with its ancillaries, magnetic and thermal shields, and piping. A mock-up assembly was conducted to evaluate the design's functionality, assessing key aspects such as rotation and railing performance, cavity support and alignment, and the mountability and stability of ancillary components.

Footnotes

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