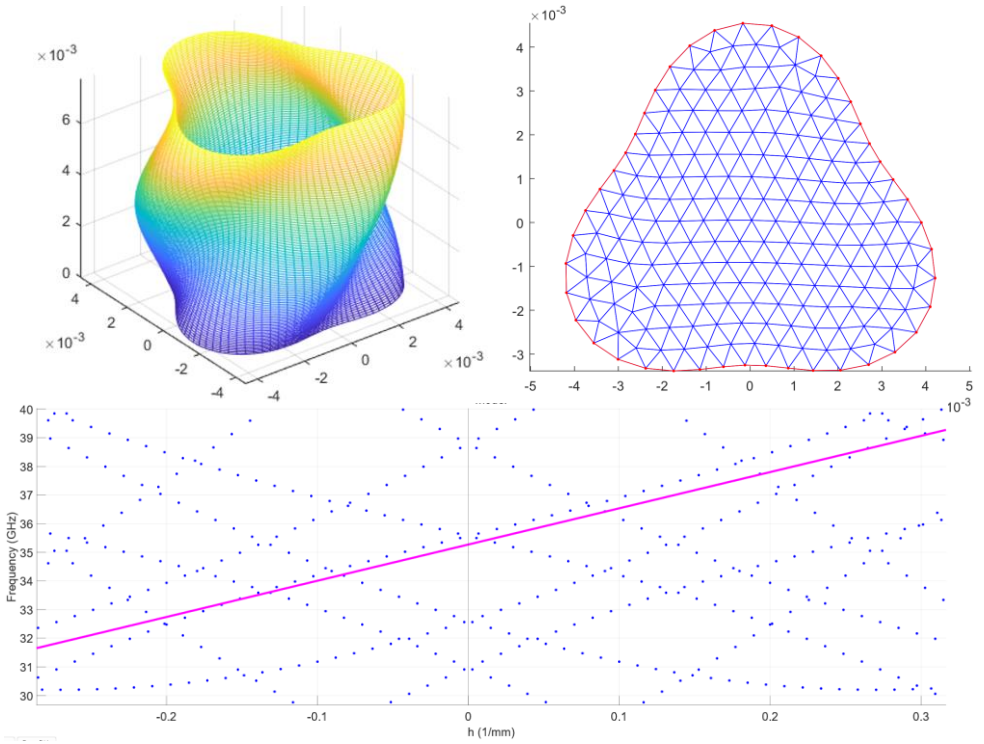
Karlsruher Institut für Technologie

HiWi at IHM

Improvement of a 2D Vector FEM solver for eigenvalues in helically corrugated waveguides

Gyro-TWTs equipped with a helically corrugated interaction region are utilized for the broadband amplification of RF signals. To compute the eigenvalues of such a waveguide, a 2D vector finite-element method has been implemented. This approach leverages a coordinate transformation that reduces the 3D structure into a 2D space, achieving high accuracy while significantly reducing computational overhead.
The solver still lacks some features and needs to be improved for future projects.



Requirements:

- Basic knowledge in MATLAB
- Interest in finite element method

Contact

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