



WPSA FP9 Enhancement Projects: Doppler Reflectometer Status

WPSA General Meeting (05-05-2022)

J. Ayllon-Guerola on behalf of D. Carralero and the CIEMAT Team

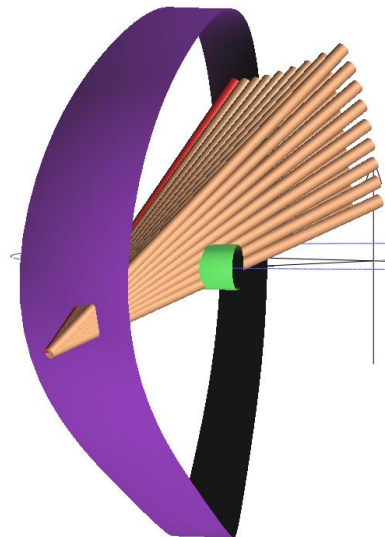


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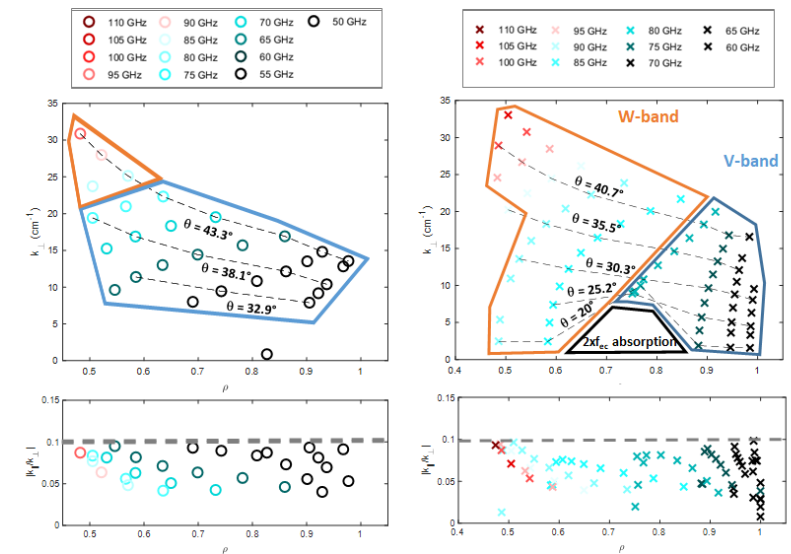


Doppler Reflectometry System - Status

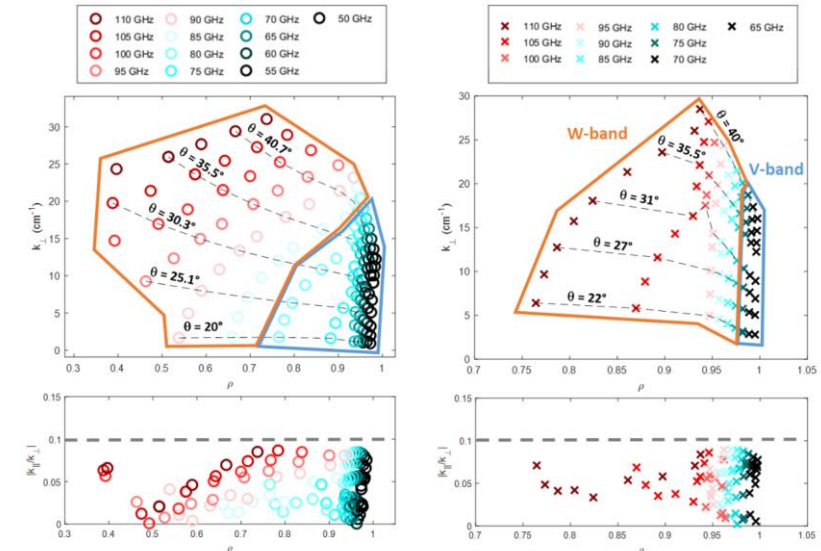
- Proposal by lead by CIEMAT (D. Carralero)
- Scientific proposal and feasibility study completed:
 - Very relevant diagnostic for the accomplishment of the JT-60SA scientific program
 - It is possible to build a Doppler Reflectometer in JT-60SA capable of achieving its scientific objectives
 - Published in Fusion Engineering and Design in 2021



Feasibility study results (high β)



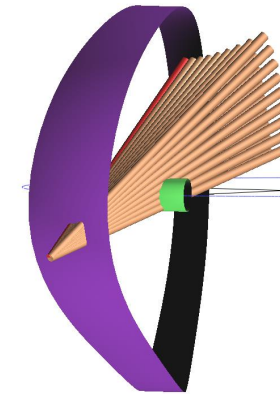
Feasibility study results (high density)



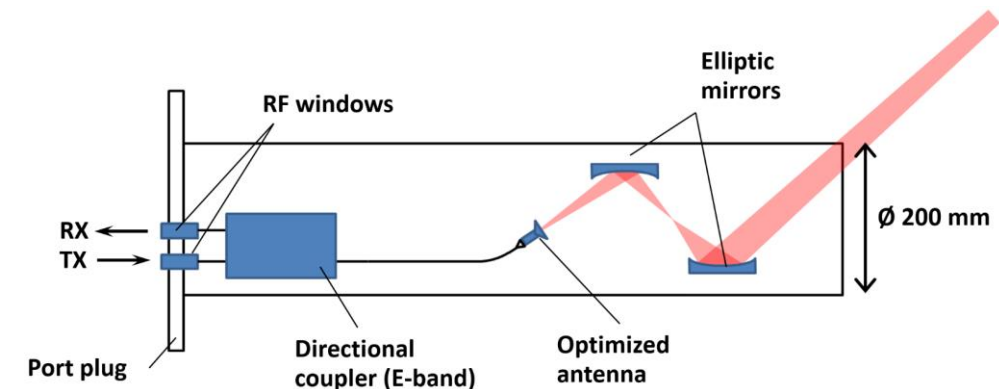
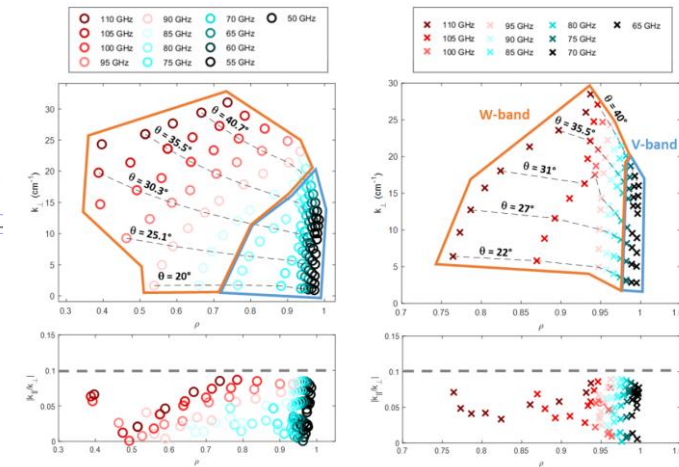


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 - It is possible to build a Doppler Reflectometer in JT-60SA capable of achieving its scientific objectives
 - Published in Fusion Engineering and Design in 2021
- Conceptual design (minimum viable + baseline design) with budget estimation proposed
 - First cost estimation stands in 300 ± 100 k€ range, depending on chosen solution (baseline ~ 200 k€)
 - A more detailed conceptual design possible if a fraction of a horizontal port is allocated for this diagnostic



Feasibility study results (high density)





Doppler Reflectometry System - 2022 Plans

- Progress on mechanical design, adding more detail to initial conceptual design
- Requirements estimation for baseline system with steering mirror
- Tentative schedule elaboration for project completion (installation included)
- Explore mechanical compatibility (space sharing) with ultra-fast reflectometry proposal (CEA): preliminary discussions in 2021 and will continue in 2022
- Support Experiment Team during diagnostics prioritization (currently undergoing)

