

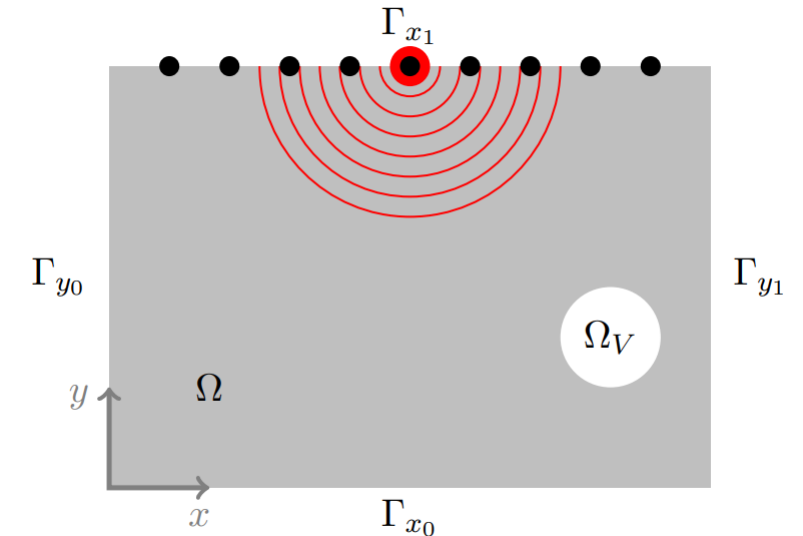
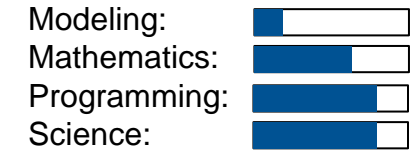
Gradient-Free Optimization for Full Waveform Inversion

Task

Apply gradient-free optimization algorithms to the problem of full waveform inversion

- Perform a literature review to identify potential gradient-free optimization algorithms
- Implement and incorporate the identified optimization algorithm within a full waveform inversion implementation (provided to you)
- Compare the results obtained by the different algorithms and identify the advantages and disadvantages of each algorithm in the context of full waveform inversion

Project Characteristics



[1] *Immersed boundary parametrizations for full waveform inversion*, Bürchner, T., Kopp, P., Kollmannsberger, S., Rank, E. (2022)

[2] *On the Use of Neural Networks for Full Waveform Inversion*, Herrmann, L., Bürchner, T., Dietrich, F., Kollmannsberger, S. (2023)