

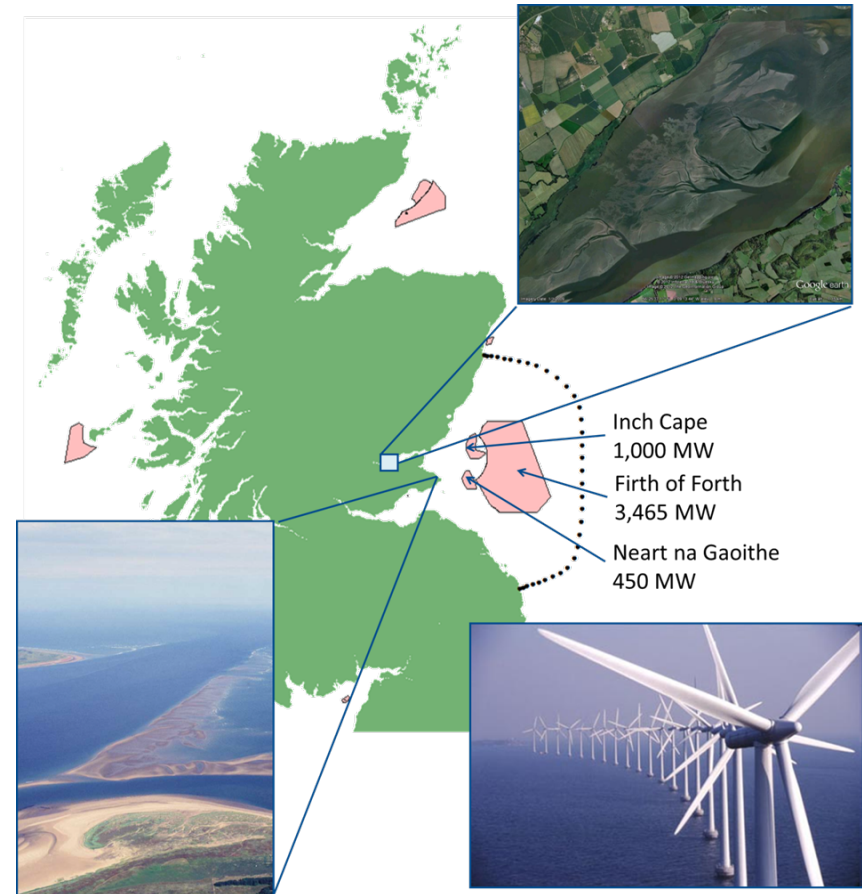
Regional scale modelling of windfarms in the Firth of Forth, Scottish east coast

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Regional scale modelling of Firth of Forth and Tay

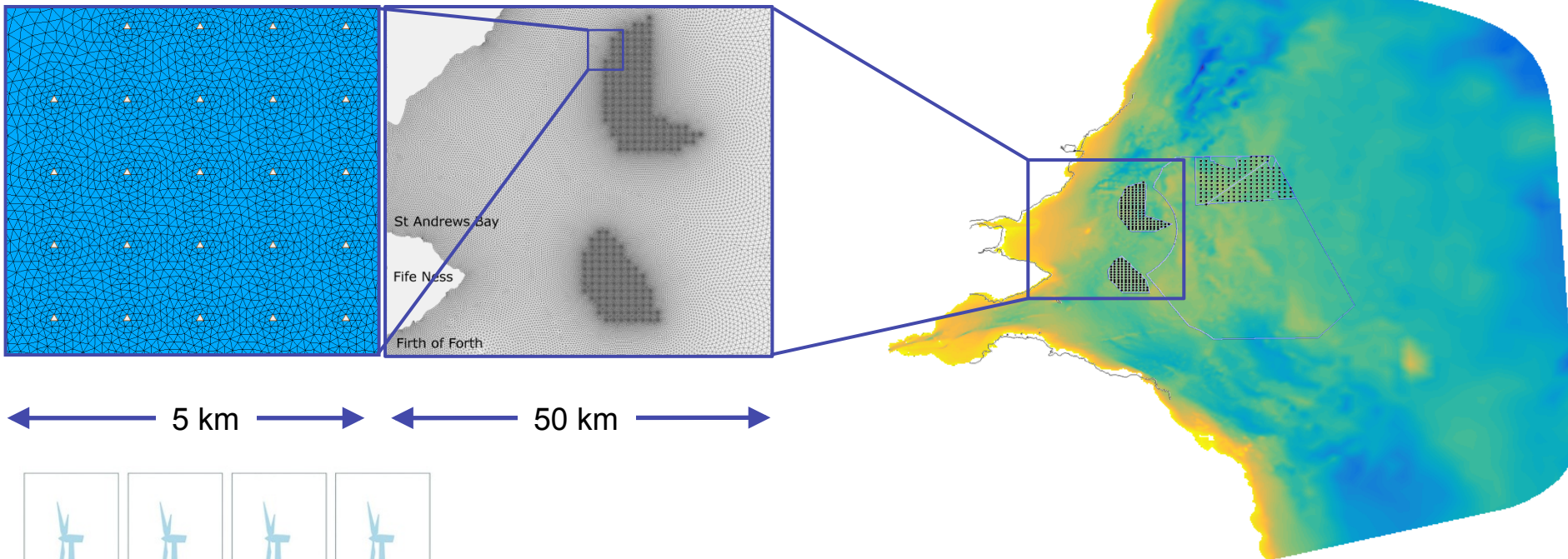
- Will offshore wind farms influence physical processes?
- What are the most suitable areas for development, considering any potential physical changes?
- Does wind farm array layout significantly alter any potential changes?



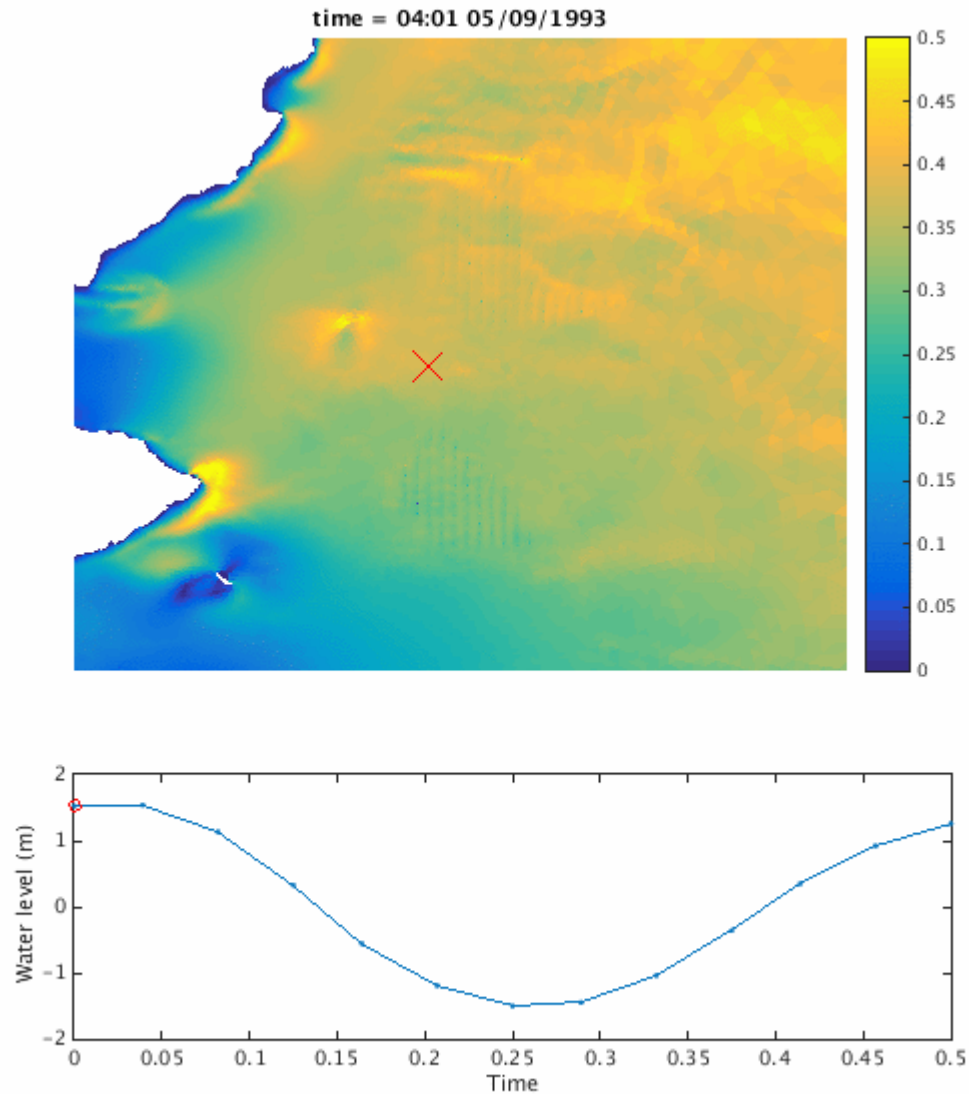
Representing wind farm arrays in FVCOM



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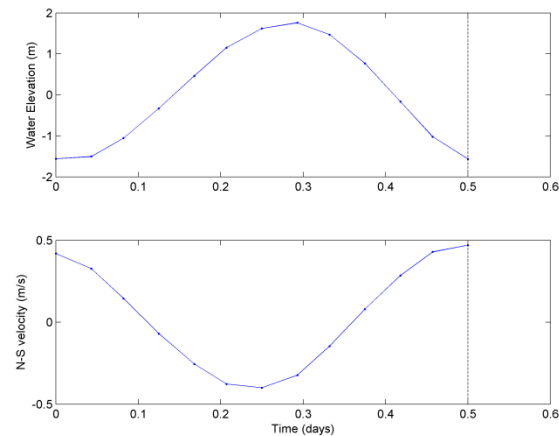
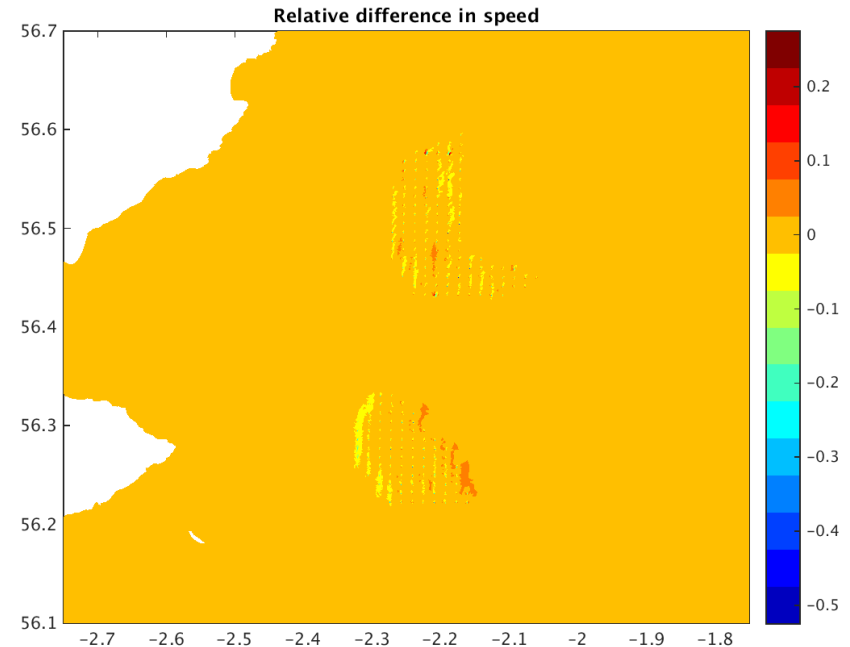


Tidal current speed with wind farm



Relative difference in tidal speed

- Relative difference = (wind farm case – baseline) / baseline
- Instantaneous difference at peak northerly flow
- Grid resolution refined to 10 m within wind farm
- **Small ‘near field’ changes**
 - flow unchanged within much of the array
- **No ‘far field’ changes**



Wind farm biological interactions

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- **MarCRF (University of Aberdeen – MSS postdoc; Jacqui Tweedle)**
 - FoF wind farm effects on biological features
 - primary productivity/forage fish/higher trophic levels
 - Using a 1-D primary production model (Sharples et al. 2006)