

Paris Session 2022



Foreseeable applications of Distributed Fibre Optic Sensing

SC B1 INSULATED CABLES – PS1 - Q2

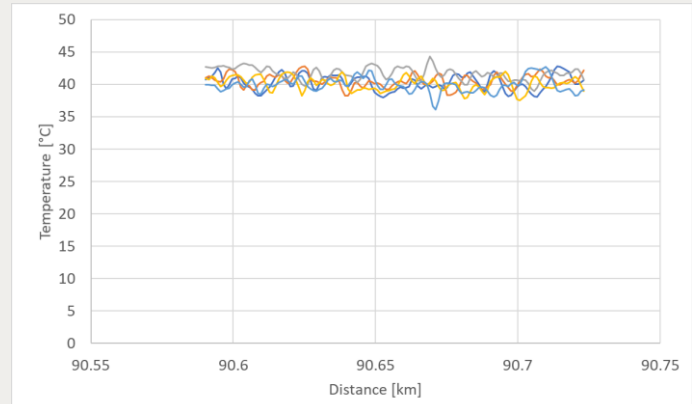
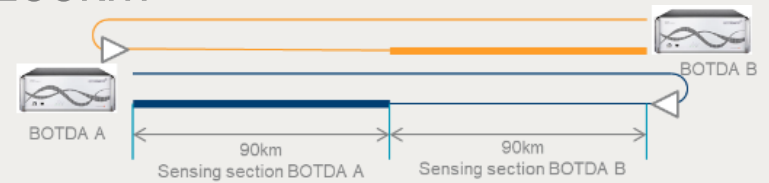
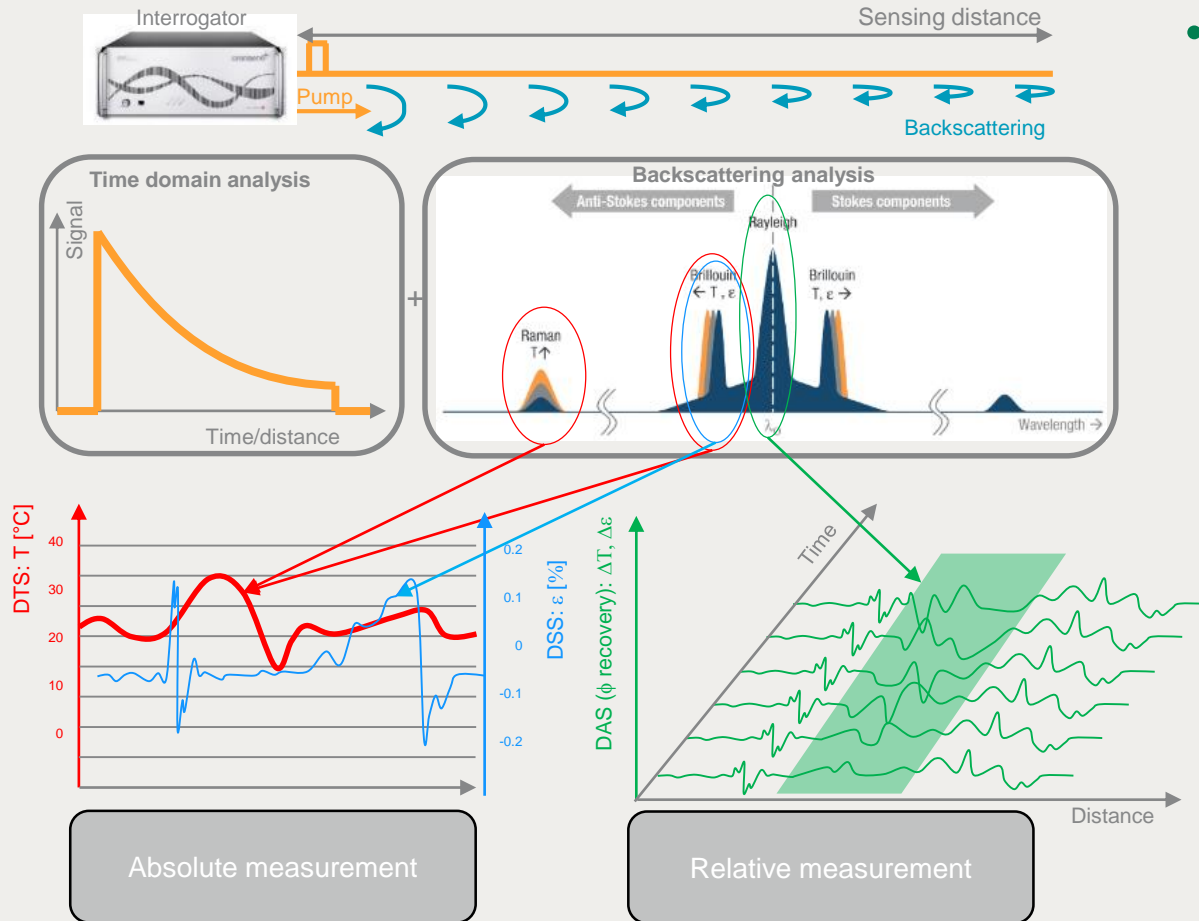
Etienne ROCHAT - Switzerland



From Distributed fibre optic sensing (DFOS) to the field

- Mature technology

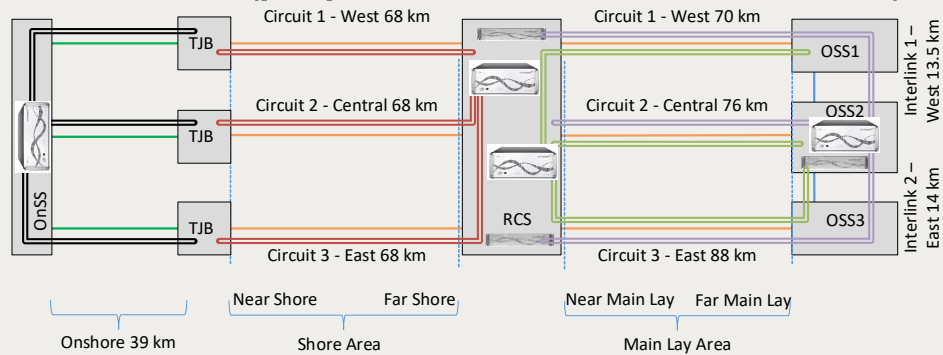
- Widely deployed within offshore wind industry
- Featuring temperature (DTS), vibration (DAS), deformation (DSS)
- With measurement range reaching 200km



Group Discussion Meeting

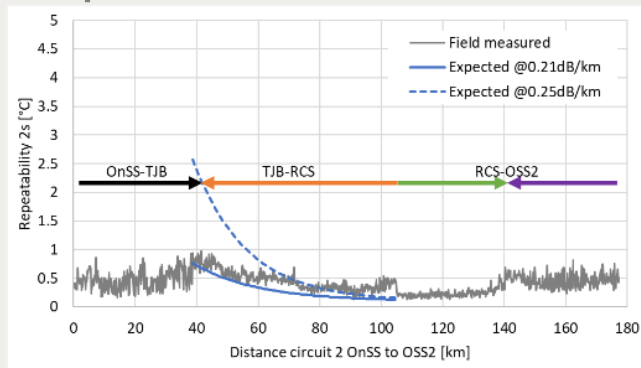
From the field to valuable data

- Complex measurement scheme as HOW01 (papers B1-10667/10665)



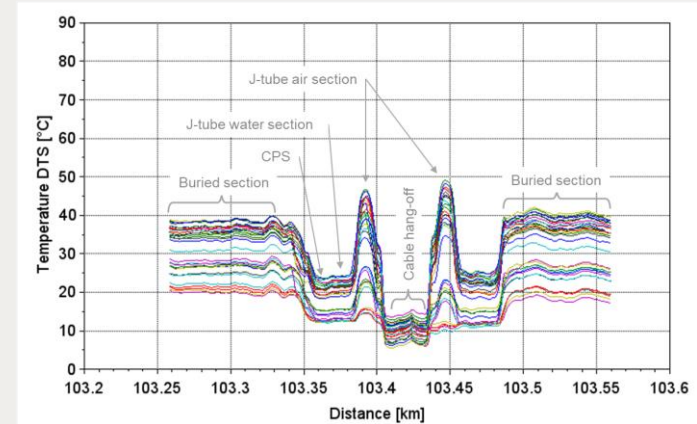
- Excellent performances

- 3m SR
- 9' to 15'

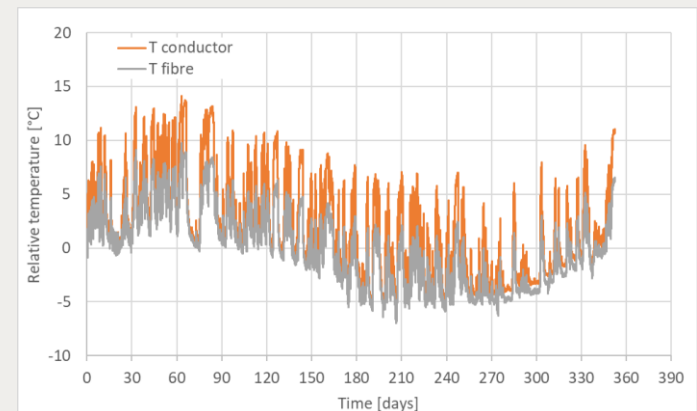


Group Discussion Meeting

- Accurate analysis / localisation



- Software (e.g. RTTR, DoB)



Outlook

- Successful DFOS features
 - Complex measurement schemes
 - Long distance
 - Multiple cable route
 - Multiple interrogator type (DTS, DAS, DSS)
 - Accurate data processing
 - Handling large amount of data
 - ML
 - SW layer for data interpretation
 - Real Time Thermal Rating (RTTR), Depth of Burial (DoB)
- This opens the way to
 - CPS investigation (DAS)
 - Fault localization (DAS, DTS)
 - Smart load management / curtailment (DTS)
 - Installation monitoring (DSS)