



Collaring mockup with 11T coil blocks

Improve validation based on measurements and their correlation with the analytical/numerical model

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Mock-up test program

Phase 1 - 150 mm mock-up

Analytic and numerical understanding

Phase 2 - long mockup

Phase 3 - additional tests

Agenda for today

- Open questions we aim to answer with future mock-up tests (José Luis)
- History, what was done in the past (Michael)
- Status of capacitive gages (Felix)
- Discussion on next steps (All)

Test-program

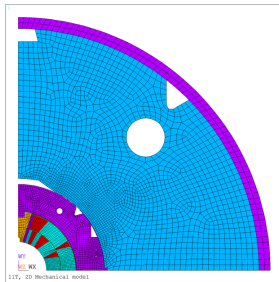
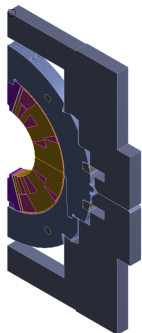
- Material choice for validation: Aluminium, Steel, Segrafine EK2200
 - Create material blocks of coil dimension incl. inspection by metrology
 - Validate Segrafine by conducting a compression test using the LVDT and extensometer method
- Integrate instrumentation according past experience, include further methods (Collar instrumentation, capacitive gages...)

Phase 1 - 150 mm mock-up

- Conduct mock-up measurements (MME test machine) - (talk by José Luis)
- In parallel: Validate results with analytical and numerical models
- FEA: Improve understanding of sub components interaction
 - E.g. Collar-nose to pole interface: reduce complexity and allow for better comparison with analytical model
- Propose off mock-up tests according need and findings

How to improve modelling

- Study component coupling and bcd separated - comparable to analytical approach prior full model study:
 - Images taken from Paolos talk in May 2018



Phase 2 - long collaring mock-up

- Conduct mock-up measurements on a long coil or coil segment
- Define motivation and adequate length for long mock-up test series ?
- Requires to re-discuss instrumentation, e.g. production of long capacitive gages ?

In parallel to main tests - additional tests

- Define calibration routines for the involved instrumentation
- Verify possibility of adding additional gages and methods for validation
- Define FEA analytical routines to validate test scenarios



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