



CTI Project: Internal aerodynamics of rail trains electric circuit breaker

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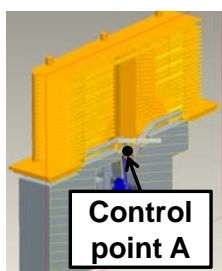
2. Sécheron SA, 1217 Meyrin, Geneva, Switzerland

Context

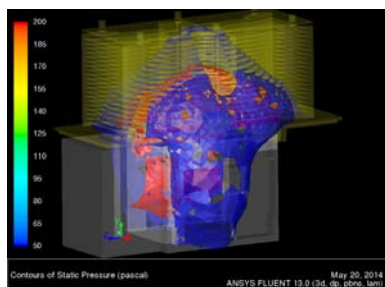
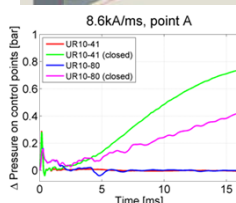
Sécheron SA and HEPIA aimed at developing a modern tool using Computational Fluid Dynamics (CFD) for better understanding and prediction of the electric arc behavior in an enclosed circuit breaker. Focus was placed on the identification of the aerodynamic phenomena occurring during short circuit interruption.



Simulations



- Software: ANSYS FLUENT
- Input: from experimental data
- Output: pressure, velocity, visualizations, ...



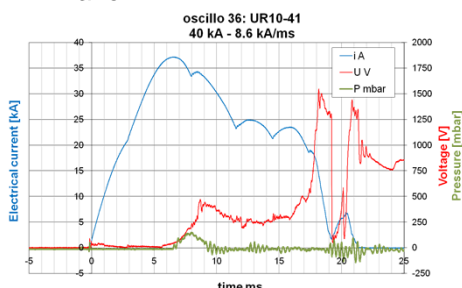
Real geometries

- Different geometries: UR10-41 and UR10-80
- Different configurations



Visualizations with high speed camera

Severe real condition tests were performed at CESI laboratory, Milano



Conclusions and outcomes

- Models validated by experimental test
- Possibility to compare configurations
- Application on real geometry
- Understanding of complex phenomena
- Investigation and solving of real problem

L'avenir est à créer