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## Research in Reservoir Simulation and Management Group

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## II WORKSHOP ENERGI SIMULATION - OPTIMIZATION AND INTEGRATION BETWEEN RESERVOIR AND PRODUCTION GUILHERME ROBERTO TONIN E JOÃO CARLOS VON HOHENDORFF FILHO

On August 10th 2018, the main UNISIM's sponsors joined the 2<sup>nd</sup> Workshop Energi Simulation.



Figure 1: II Workshop on Optimization and Integration between Reservoir and Production Systems.

Attending the event were Duke Anderson and Andrew Seto of Energi Simulation, and Victor Salazar from CMG (Computer Modeling Group). PETROBRAS was represented by Marco Cardoso, Alexandre Emerick and Fábio Coelho. SHELL was represented by Frances Abbots and Moises Silva. The event also had the participation of Prof. Leonardo Guimarães from UFPE (Federal University of Pernambuco) and professors, researchers and students from UNICAMP.



Figure 2: Workshop participants.

The technical event was held at FEM (School of Mechanical Engineering) and was attended by approximately 50 people. The presentation schedule was opened by Prof. Denis followed by presentations of PhD and Masters students, according to the following subjects:



Figure 3: Prof. Denis Schiozer - Initial presentation.

- 1) Ashish Loomba: Closed Loop Reservoir Development (CLRDM)
- 2) Robison Saalfeld: Upscaling Workflow Based on Characteristic Flow Units to Increase Reservoir Forecast Reliability
- 3) Victor Rios: Methodology to Improve Miscible Gas Injection Forecast Based on a Field Scale Simulation Model
- 4) Forlan Almeida: Cyclical Uncertainty Reduction Process
- 5) Luis Otávio Silva: Selection of Robust Production

Strategy Using Representative Models of an Oil Field in the Development Phase

- 6) Daniel Santos: Influence of Well Control Parameters in the Development of Petroleum Fields Under Uncertainties
- 7) João Hohendorff: Integrated Production Strategy Optimization Based on Iterative Discrete Latin Hypercube
- 8) Kildare Gurjão: Oscillation Mitigation in Subsurface and Surface Couplings Using PID Controllers
- 9) Oscar Piraneque: Use of Subsea Technologies for Water Production Management in Offshore Fields Using Integrated Asset Modeling
- 10) Rodrigo Vaz: Evaluation of Subsea Gas-Liquid Separation for a High GLR Reservoir with Total Gas Reinjection.

All works presented are related to research projects under development at UNISIM and cover the entire CLRDM (closed loop reservoir development and management) methodology which is based on 12 steps for decision analysis related to petroleum fields development and management. It includes reservoir simulation, risk analysis, history matching, uncertainty reduction, representative models and selection of production strategy under uncertainty. The entire process is integrated with geosciences (reservoir characterization and representation including uncertainties), production facilities (MIP) and economic.

At the end of the technical session, an advisory board (Energi and industry representatives) meeting was organized for general discussion about the progress of projects and planning for the future of the research.



Figure 4: Advisory Board meeting.

UNISIM would like to thank our sponsors, speakers, organizers and all participants of the event. We also thank UNICAMP, CEPETRO and School of Mechanical Engineering for the support.

## About the authors:

Guilherme Roberto Tonin works in the administrative area of UNISIM since 2009.

João Carlos von Hohendorff Filho is graduated in Civil Engineering, specialized in Petroleum Engineering with emphasis on Reservoir Engineering, and master's in Petroleum Sciences and Engineering. He is a researcher at UNISIM/CEPETRO/UNICAMP since 2013, in the area of Simulation and Management of Petroleum Reservoirs.