

Prof. Assyr Abdulle

Mathematics Institute of Computational Science and Engineering - MATHICSE

SEMINAR OF NUMERICAL ANALYSIS

➤ **WEDNESDAY 29 OCTOBER 2014 - ROOM ME B3 31 - 16h15**

Prof. Sorin POP, (TU Eindhoven, The Netherlands) will present a seminar entitled:

**"A mathematical model for two - phase porous media flow
with dynamic effects in the capillary pressure"**

Abstract:

We consider a mathematical model for two-phase flow in porous media. The particular aspect is in including dynamic effects in the phase pressure difference. Compared to traditional models, the resulting model is pseudo-parabolic and includes a third order mixed derivatives term.

After introducing the mathematical model, the existence and uniqueness of weak solutions is discussed in different formulations. Then we analyze different numerical schemes. Finally, numerical results are provided and compared to experimental results. A particular feature is the possibility of obtaining non-monotonic solution profiles.

Lausanne, 16 October 2014/AA/vl