CONSERVATIVE AVERAGING METHOD: THEORY AND APPLICATIONS

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The idea behind the conservative averaging method is at least 70 years old, see [1], [2]. This idea has been employed in the modeling of heat transfer processes [3] and improving an oil recovering process [4]. In virtually all of the early papers non-classical boundary conditions are obtained in an intuitive way by exploiting certain specific peculiarities of the particular problem, without well-founded mathematical basis. The mathematical foundation has been provided in the doctor of sciences thesis [5]. The name *conservative averaging method* was coined in this thesis. Here and in other papers [6], [7] the solution is approximated with a polynomial. Later exponential approximation was used [8]. Recently we have introduced a novel hyperbolic approximation [9]. In this lecture we present several numerical calculations.

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