Explicit solution of a problem modelling nonlinear Atmosphere dynamics with consideration of heat transfer, humidity and moisture content

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We present a theoretical study of solutions of nonlinear systems of partial differential equations which describe turbulent movement of Atmosphere flows counting with heat transfer, humidity and moisture content.
We investigate the existence and uniqueness of strong solution. We also establish an explicit algorithm for numerical computing of the solution by Galerkin method. The results may find practical application in modelling the Atmosphere dynamics, especially in the clouds, where the introduction of separate functions of humidity and water (moisture) content is justified.

Keywords: dynamics of the Atmosphere, numerical solutions of nonlinear PDE systems, explicit computing algorithm, Galerkin method, existence and uniqueness of solutions of PDE systems