

# Numerical simulation of a climate model with latent heat of fusion.

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In this work it is obtained the numerical solution of global climate model with the consideration of latent heat of fusion. The model is based on that proposed by Watts y Morantine but modified by the inclusion of a temperature dependent coalbedo and also with the latent heat of fusion.

One of the main features of the model is the dynamic and diffusive boundary condition, representing the coupling between atmosphere and ocean. The numerical method applied is based on a finite volume scheme with nonlinear WENO reconstruction and Runge-Kutta TVD for time integration. The nonlinearity due to the latent heat is solved by means of a numerical scheme that combines the iterative methods of Newton-Raphson and bisection. This is a joint work with Lourdes Tello (UPM) and Jesús Ildefonso Díaz (UCM).

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