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## **Discretization in space for an atmospheric pollution model with finite difference method application in region South Algeria**

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Each climate system component operates on a range of characteristic temporal and spatial scales. The knowledge of these scales is necessary for a correct formulation of climate models; the present work emphasis is given on the modeling of the horizontal transport of pollutant by taking basic assumptions for the wind velocity, mass burning rate of pollutant from the source. The present study is desired to calculate the concentration in horizontal direction of flow of pollutant. As any mathematical models of natural systems, a climate model is a simplification. The degree of accepted simplification determines the complexity of the model and restricts the applicability of the model to certain questions. Hence, the complexity of a chosen model sets the limitations to its application. The quality of a climate model is not judged by the mere number of processes considered, but rather by the quality of how chosen processes and their couplings are reproduced. This paper has three main goals

-To introduce the physical basis and the mathematical description of the different components of the climate system and the derivation of differential equations which describe the most important climatic processes

-To introduce in the numerical solutions of ordinary partial differential equations using examples from climate modeling

-To use and apply Matlab as a mathematical-numerical tool. In this work the predictability of atmospheric flow depends on the current state of the atmosphere. Predictability can be determined by integrating an ensemble of initial conditions that are within certain predefined bounds.

The feasibility and effectiveness of the proposed method is demonstrated by computer simulation

### **Biography**

Mohammedi Ferhat is a Lecturer in the Department of Sciences Matter I and Sciences Earth and The Institute of Physics at University Med Khider Biskra. He received his B.S. degree in forestry from the University of Strasbourg in 1984 and his M.S. in forestry in 1989, also from the University of Louis Pasteur Strasbourg, specializing in sensors lasers and systems Photonics. In 1993, he received his PhD from the Advance School of Physics Telecoms (ENSPS-ULP-UDS) at the University of Strasbourg.

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