



Contaminant plume configuration and movement: an experimental model

A. Alencoao (1,2), A. Reis (1,2), M. G. Pereira (3), M. L. R. Liberato (3), L. Caramelo (3), M. Amraoui (3), and V. Amorim (3)

(1) University of Tras-os-Montes e Alto Douro, Geology, Vila Real, Portugal (alencoao@utad.pt), (2) Center for Geophysics, University of Coimbra, Coimbra, Portugal, (3) Departament of Physics, University of Tras-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

The relevance of Science and Technology in our daily routines makes it compulsory to educate citizens who have both scientific literacy and scientific knowledge. These will allow them to be intervening citizens in a constantly changing society. Thus, physical and natural sciences are included in school curricula, both in primary and secondary education, with the fundamental aim of developing in the students the skills, attitudes and knowledge needed for the understanding of the planet Earth and its real problems.

On the other hand, teaching in Geosciences is more and more based on practical methodologies which use didactic material, sustaining teachers' pedagogical practices and facilitating students' learning tasks suggested on the syllabus defined for each school level.

Themes related to exploring the different components of the Hydrological Cycle and themes related to natural environment protection and preservation, namely water resources and soil contamination by industrial and urban sewage are examples of subject matters included on the Portuguese syllabus. These topics motivated the conception and construction of experimental models for the study of the propagation of pollutants on a porous medium.

The experimental models allow inducing a horizontal flux of water though different kinds of permeable substances (e.g. sand, silt), with contamination spots on its surface. These experimental activities facilitate the student to understand the flow path of contaminating substances on the saturated zone and to observe the contaminant plume configuration and movement. The activities are explored in a teaching and learning process perspective where the student builds its own knowledge through real question- problem based learning which relate Science, Technology and Society.

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