

CRITERIONS OF PHYSICO-MECHANICAL SIMILARITY FOR SOIL RESISTANCE TO WATER EROSION

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To assess the effectiveness of soil management, irrigation and drainage activities, and to protect soils from erosion it is necessary to have quantitative, numerical criterions. The method for formalisation of qualitative or semi-quantitative parameters, the search for similar class of physical phenomena and physical modeling in soil science and soil physics is being provided by the theory of similarity. The method of dimension analysis of the similarity theory is being used for the research, compilation and simulation of a physical phenomena of soil resistance to water erosion. The work demonstrates the possibility of the dimension analysis used in the similarity theory for obtaining unambiguous solutions to multivariable functions.

Keywords: similarity theory, dimension analysis, mechanical properties, agricultural operations, soil protection, water erosion.