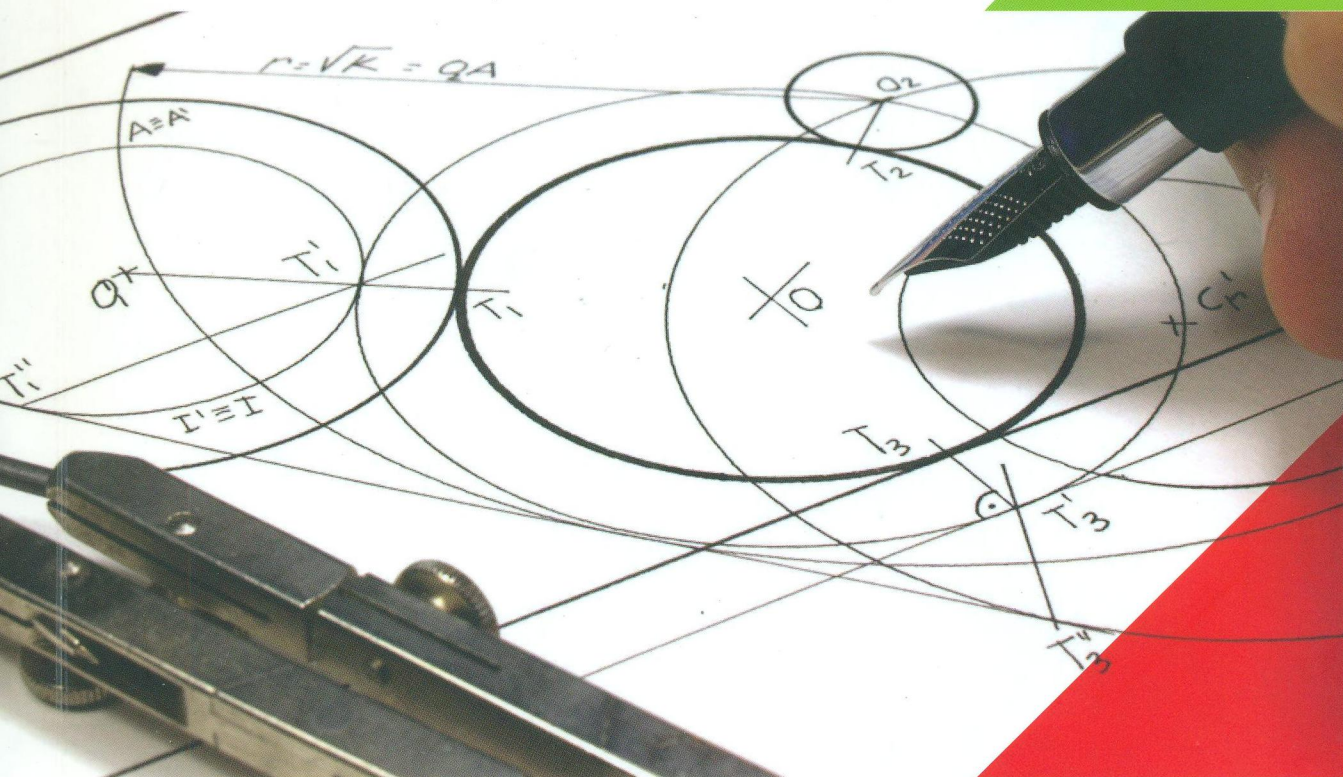
جامعة أبوظبي
ABU DHABI UNIVERSITY

مركز الإمارات للدراسات والبحوث الاستراتيجية
The Emirates Center for Strategic Studies and Research

The 3rd Abu Dhabi University Annual International Conference

Mathematical Science and its Applications

ABSTRACTS BOOK



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The Effect of Water Level on Prey-Predator Interactions: a Nonlinear Analysis Study

Nadjia Mrabet (Chiboub Fellah)
Department of Mathematics, University of Tlemcen, B. P. 119, Tlemcen, Algeria
Coauthors: S. M. Bouguima, A. Moussaoui

Water level may influence local dynamics. We examine how seasonal variations in water level affect the outcome of prey-predator interactions in Parloup lake in the south of France. We propose a new model to describe the annual cycle for the persistence by using a continuation theorem of coincidence degree.

Mathematical Modeling of Fluid Flow in the Porous Medium Based on Mass-Transfer Processes

Saltanbek Mukhambetzhanov
Al-Farabi Kazakh National University, Faculty of Mechanics and Mathematics, Department of Differential Equations and Control Theory, 050040, Almaty, Kazakhstan, Al-Farabi av., 71

The paper is devoted to the mathematical and numerical modeling of the process of fluid flow in porous media. Various variants of the liquid are considered in a neighborhood of the wells. The boundaries of the fluid flow are unknown, and they are determined in the process of solving systems of PDE's. For the comparative analysis of the results obtained with the real data fields test cases were constructed.