

## عنوان مقاله:

Modeling Wind-Driven Circulation and Chlorophyll Concentration in Lake Valencia

## محل انتشار:

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## خلاصه مقاله:

The goal of this research is to describe circulations patterns and chlorophyll concentration in Lake Valencia. The hydrodynamics of episodic events are simulated with a shallow-water model, coupled with an advection-diffusion equation. This model uses a MacCormack-TVD numerical scheme to solve the continuity and momentum equations simultaneously while the advection-diffusion equations determine the time dependent pollution dispersion, in particular the chlorophyll concentration. An analysis of chlorophyll concentration is completely developed and validated with satellite images of Lake Valencia. Although the use of shallow water models is a fairly standard in the study of lake circulation and chlorophyll concentration, its application to Lake Valencia is new. Therefore, the circulation and chlorophyll patterns developed in this numerical study represent an original contribution.

## کلمات کلیدی:

Lake circulation model, Shallow water model, advection, diffusion equation, MacCormack, TVD numerical scheme, Saint Venant equation, Chlorophyll concentration

## لینک ثابت مقاله در پایگاه سیویلیکا:

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