



## The internal wave field in Sau reservoir: Observation and modeling of a third vertical mode

Vidal, Javier, Xavier Casamitjana, Jordi Colomer, Teresa Serra

Limnol. Oceanogr., 50(4), 2005, 1326-1333 | DOI: 10.4319/lo.2005.50.4.1326

**ABSTRACT:** Water withdrawal from Mediterranean reservoirs in summer is usually very high. Because of this, stratification is often continuous and far from the typical two-layered structure, favoring the excitation of higher vertical modes. The analysis of wind, temperature, and current data from Sau reservoir (Spain) shows that the third vertical mode of the internal seiche (baroclinic mode) dominated the internal wave field at the beginning of September 2003. We used a continuous stratification two-dimensional model to calculate the period and velocity distribution of the various modes of the internal seiche, and we calculated that the period of the third vertical mode is ~24 h, which coincides with the period of the dominating winds. As a result of the resonance between the third mode and the wind, the other oscillation modes were not excited during this period.

### Article Links

[Download Full-text PDF](#)

[Return to Table of Contents](#)

### Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles