



Time series analysis and statistical methods for current velocity obtained by ADCP measurements

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The current structure is controlled by numerous independent parameters in nature. In such a chaotic media, understanding the physical processing is quite difficult. Moreover errors, coming from different sources, of the measurements are getting the problem more complex. To overcome this sophisticated situation time series analysis by reconstruction phase space methods are very useful.

In our study we deployed an ADCP (Workhorse 300 KHz) to collect a continuous data set covering seven days at a shallow water having 21m depth in Antalya Bay in the Mediterranean Sea. The chosen bin size is 1m and ensemble time is 1minute during the measurement period.

We calculate the delay time, and the correlation dimensions of the current velocity of different depths using the autocorrelation functions. While stability in some depths is determined in some certain depths, in some other depths noise is encountered.