VAV: A PROGRAM FOR TIDAL DATA PROCESSING

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Abstract

The paper deals with a new computer program, named VAV, for the analysis of any kind of tidal data. VAV can be applied on unevenly spaced data without any interpolation. The basic algorithm consists in a transformation of the data from the time domain into a time/frequency domain. This is done through filtration of data intervals without overlapping. This operation eliminates a rather flexible model of the drift. The filters used are orthogonal and in the case of unevenly spaced data, they are adaptable in the time domain. After the transformation, the tidal parameters are estimated through the method of the least squares that is applied in the time/frequency domain. Since the noise of the data is correlated, VAV provides frequency dependent estimates of the precision. The program is specially orientated towards the search of various anomalies of the data, which may be useful, eventually, for earthquake and volcano monitoring.