Time series is one of the most common forms of presenting raw data in geophysics and many other sciences. Successive values of the investigated characteristics reflect internal dynamics of objects and their mutual relationship and variability of these relationships over time. That is why studies of time series are extremely important in many fundamental and applied geophysical problems.

Smoothing of time series is one of powerful tools for their study. In general stochastic environment the smoothing of time series can be considered as a possible version of its ideal course. Dually, this fact provides an approach definition to anomalies of time series: they can be regarded as fragments of significant deviations from the time series smoothing.

Constructed gravitational smoothing of time series possesses great flexibility: it can operate in an arbitrary finite metric space and, like regression or splines, can smooth multivalued and weighted time series. On the other hand, in regular cases it is not inferior to smoothing based on Fourier and wavelet analysis.