

Dear Dr. Williams,

During the proofreading of the manuscript "Reconstruction of Mediterranean coastal sea level at different timescales based on tide gauge records" we detected a typo in equation (1a) that had gone undetected during previous revisions. Now we have been asked to send you an explanation about it, for you to approve this change in the manuscript.

Equation (1a) is the introductory equation to the interpolation method, reporting how a single interpolated value ϕ_g is obtained from a set of N observations ϕ_i^o . Hence it should read as it appears in Hasselmann et al. (1997):

$$\phi_g = \phi_g^{fg} + \sum_{i=1}^N W_{gi} (\phi_i^o - \phi_i^{fg}) = \phi_g^{fg} + \sum_{i=1}^N W_{gi} \phi_i'$$

In the previous version, the summations in front of the weights (W_{gi}) were missing. In the manuscript it is indicated that the value of the state vector of the system at point g is obtained as a first guess at that point (ϕ_g^{fg}) plus the weighted differences between observations (ϕ_i^o) and the value of the first guess at each observation point (ϕ_i^{fg}). Thus, the weighting of the differences obviously needs of a summation over all observation points.

It is probably also convenient to complete the line after equation (1a) in the following way: "*where W_{gi} are the weights applied to the differences at each observation point i to obtain the state vector at point g , and N is the number of observation points.*"

From that point we reformulate (1a) but now for the whole state vector ϕ_g (which contains all interpolation points), the first guess vector ϕ_g^{fg} (with the values of the first guess at every interpolation point) and the vector of differences ϕ' at all observation points. In that formulation (1b), the weights can be represented by a matrix W . Therefore, in the first sentence after (1b), ϕ_g , ϕ_g^{fg} and ϕ' should be written in boldface, since they are vectors.

We apologize for the inconvenience of this late corrections.

Best regards,

The authors