

Summary:

The aim of this paper to introduce and to illustrate the use of the `lg` package for R which implements the computation and visualization of the concept of ‘local Gaussian correlation’. The local Gaussian correlation (LGC) is a measure of linear and non-linear dependence, proposed recently by Tjøstheim and Hufthammer (2013). Specifically, the paper presents how the GLC can be estimated from empirical or simulated data and how the ‘dependence structure’ described by the GLC can be visualized. Further, the application of statistical tests for the significance of correlation (i.e. GLC) is demonstrated.

Comments to the author(s):/ Some specific comments:

My main comments and questions are as follows:

1. What does “ $\mu_i(x_1, x_2) = \mu_i(x_i)$  and  $\sigma_i(x_1, x_2) = \sigma_i(x_i)$  for  $i = 1, 2$ ” imply? According to your text – if I understand correctly – it implies *dependence*. However, I feel, the opposite is true. Have a look please. Compare also to Berentsen & Tjøstheim (2014), p. 788.
2. Please confirm that Eq. (3) is complete. Compare Berentsen & Tjøstheim (2014) pp. 790-791.
3. There is a typesetting error in Eq. (4).
4. I assume there is a (little) typo in the code chunk on page 14: You assign a value/information to an object called ‘`dlg_object`’ but then use ‘`dlg_object1`’, also in the following code chunks.
5. Please consider adding a page number to the quote from Forbes & Rigobon (2002) on p. 3.
6. Please add interpretations of the empirical findings in the empirical application(s).