Review of: "A memory dependent analysis on permeation of non-Gaussian laser pulse through human skin"

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Potential competing interests: No potential competing interests to declare.

The paper is focused on the thermo-elastic problem of heat conduction of the layers of the human skins.

The authors used the concept of memory effect introduced by Zwanzig in the early 60's (Zwanzig R. Phys Rev 124, 983 (1961) for taking into account that the system response at a given time, is not only defined by the time change of the solicitation but also by what occurred previously. (Pay attention not to confuse with system evolution which is in any case defined by the past). The way to introduced the past in the response is then developed by Sokolov I.M. (Phys; Rev. E66 (2002)) and then by ref 23 of the paper. In many problems where the time variation is very fast or of large amplitude, the use of such an approach has been introduced considerable progress. Here, the pulses are considered of several ps and thus the application is fully relevant. However, as the subject is quite new and at the cutting edge of the knowledge, the authors may be more explicit how the introduction of a integro-differential function implies the past correctly.

Then, the past is introduced by using a Kernel function. What is the reason for choosing one or another? What is the impact on the results?

It should be written also, that due to the introduction of integro-differential term, the transformation in the Laplace domain is an obligation for solving the set of equations. Otherwise, the section 6 is very clear.

Results appears to be spectacular and show very large difference with classical one and this should be published.

Details

In equation 11, the index of the second membre is not correct. It should be also precised the content of $\underline{D}_w$.

Equation 25 is not equal to 1 but to L0

The x label of fig.4 is missing.

Chose the same coding color for figures 5 and 6.