Reply to Reviewer #1

We would like to thank the Reviewer for bringing up this issue and for pointing out and discussing the most important points related to it. Based on the Reviewer's comments, we have added an additional discussion of this problem and provided new references.
In the revised version of the manuscript, the new content added in the Introduction and Conclusions sections is marked in blue.

In Introduction:

"It should be noted, however, that in a broader sense of topological dynamics, the FODE solution written in the Caputo sense causes some problems with interpretation. The attractor of a dynamical system defined by the integer-order ordinary differential equation $\dot{x} = f(t, x0)$, where $f : JxR^d \rightarrow R^d$ is a continuous vector-valued function for a finite time interval $J := [0, T]$ and for an integer d, is located in the system variable space R^d. However, when we turn to solving fractional differential equations in the Caputo sense

$$D_0^{\alpha} + x(t) = f(x, t), \quad (1)$$

where the fractional order of the equation $\alpha \in (0, 1)$, x is a vector in R^d and $f : JxR^d \rightarrow R^d$, the obtained solution is not a dynamic system in R^d [8]. The second condition defining a dynamical system (semi-group) [18,20]

$$x(x_0, t + s) = x(x(x_0, s), t) \quad (2)$$

is not satisfied. Thus, the attractor of the dynamic system, defined e.g. in [4, 19,20], cannot be discussed. Formally, this makes it impossible to study solutions of the FODE written in the Caputo sense using nonlinear dynamics methods. As was shown in [9], FODEs written in the Caputo sense can generate dynamic systems in an infinitely dimensional Banach space. Given these topological conditions, solutions (including attractors) obtained by the DTM method should be treated as projections of global objects into the R^d space, where $d = 3$ in the case under consideration."

In Conclusions:

"As mentioned in Introduction, when considering topological conditions of a solution obtained via DTM-processing of the FODE in the Caputo sense, we must take into account possible inaccuracies resulting from limiting the solution to a three-dimensional space. Therefore, more theoretical analyzes and numerical experiments are needed to better assess which of the two integrating approaches of the fractional system under consideration gives results that are closer to true solutions."