

On the Lipschitz Property of the Relative Rearrangement

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Since its introduction as the derivative of the decreasing rearrangement u_* , several properties of the relative rearrangement b_{*u} have been established, in particular the Lipschitz condition considering the relative rearrangement like a function of b . Here, our interest will be focused on the relative rearrangement considered as a function of u which is a new feature as far as we know.

We give some useful estimations for the numerical solution of differential equations involving relative rearrangements of a data function b with respect to the solution u , when fixed point techniques are used. This kind of nonlocal problems is widely discussed in the literature dealing the plasma physics. In order to prove the convergence of iteration schemes it is helpful to have a Lipschitz condition (even more, a contractive property) of nonlocal terms. We shall just suggest a way to obtain them and analyse some suitable hypothesis.

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