SECOND COMMUTATION LEMMA FOR FRACTIONAL H-MEASURES

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Microlocal defect functionals (H-measures, H-distributions, semiclassical measures etc.) are objects which determine, in some sense, the lack of strong compactness for weakly convergent L^p sequences. H-measures are suitable to treat problems where all partial derivatives are of the same order [1]. Recently, parabolic H-measures are introduced in order to treat 1:2 ratio between orders of partial derivatives [2], and also fractional H-measures which treat arbitrary ratios [3].

We generalise Second commutation lemmas introduced in [1] and [2] to fractional H-measures, from which we are able to derive the propagation principle for the following fourth order partial differential equation:

$$iu_t + (a(x)u_{xx})_{xx} = f.$$

REFERENCES

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