ZAK TRANSFORM FOR BOEHMIANS

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ABSTRACT

It is known that the classical Zak Transform is a linear unitary transformation from $L^2(R)$ onto $L^2(Q)$ whose image can be completely characterized. In this paper, we shall construct a Boehmian space B_1 containing $L^2(R)$ and another Boehmian space B_2 containing $L^2(Q)$ and define Zak transform as a continuous linear map of B_1 onto B_2. We shall also prove that this extended definition is consistent with the classical definition and that there are Boehmains which are not L^2 – functions but for which we can define the generalized Zak transform.

KEYWORDS: Boehmians, Convolution, Lebesgue Measurable Functions, Sequence, and Zak Transform

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