
JUAN HECTOR ARREDONDO RUIZ, Universidad Autónoma Metropolitana

On the Factorization theorem in the space of Henstock-Kurzweil integrable functions

We apply the factorization theorem of Rudin and Cohen to the space of Henstock-Kurzweil integrable functions $HK(R)$. This implies a factorization for the isometric spaces A_C and B_C . We also study in this context the Banach algebra $HK(R) \cap BV(R)$, which is also a dense subspace of $L^2(R)$. This space is in some sense analogous to $L^1(R) \cap L^2(R)$. However, while $L^1(R) \cap L^2(R)$ factorizes as $L^1(R) \cap L^2(R) * L^1(R)$, via the convolution operation $*$, it will be shown that $HK(R) \cap BV(R) * L^1(R)$ is a Banach subalgebra of $HK(R) \cap BV(R)$. Joint work with Maria G. Morales