

İSTANBUL ANALYSIS SEMINARS

ON WEST COMPACTIFICATIONS OF LOCALLY COMPACT ABELIAN GROUPS

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Abstract: It is known that, using an idea of T. T. West, the unit ball of $L^\infty[0, 1]$ can be identified as a compactification of \mathbb{Z} . In this talk, we will generalize this result to any locally compact Abelian group G . Depending on the algebraic properties of G , we will construct a semigroup compactification as a certain compact subsemigroup of $L^\infty[0, 1]$, which is a quotient of both the Eberlein compactification, G^e , and the weakly almost periodic compactification, G^w , of G . The concrete structure of these compact quotients allows us to gain insight into known results by G. Brown, W. Moran, J. Pym and B. Bordbar, where for groups $G = \mathbb{Z}$ and $G = \mathbb{Z}_q^\infty$, it is proved that G^w contains uncountably many idempotents and the set of idempotents is not closed.

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