On the Eberlein compactification of a topological group

The set $B(G)$ of all matrix coefficients associated to continuous unitary representations of a given topological group $G$ is a $\ast$-closed, subalgebra of the $C^\ast$-algebra $\ell_\infty(G)$ of all bounded functions on $G$. We will refer to the spectrum of the closure (in $\ell_\infty(G)$) of this subalgebra as the Eberlein compactification $eG$ of $G$.

Multiplication on $G$ can be extended in the standard way to the Eberlein compactification and $eG$ is thus made into a semitopological semigroup. $eG$ is therefore a semigroup compactification of $G$ placed between the almost periodic and weakly almost periodic compactifications. In this talk we will overview some of the features of the Eberlein compactification $eG$ that concern its size, complexity, algebraic structure or the way $G$ fits in it.