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The Spine of a Fourier–Stieltjes Algebra

Let G be a locally compact group, $A(G)$ be its Fourier algebra and $B(G)$ its Fourier–Stieltjes algebra. If G is abelian, with Pontraygin dual group $\hat{G}$, the $B(G)$ is isometrically isomorphic to the measure algebra $M(\hat{G})$. A subalgebra of $M(\hat{G})$ was developed independantly by J. Taylor and J. Inoue in the '70s, which comprised of all "maximal group algebras" inside of $M(\hat{G})$; this was called the *spine* of $M(\hat{G})$.

We develop the spine of $B(G)$ for any locally compact group G. It is comprised of all of the "maximal Fourier algebras" inside of $B(G)$. More precisely, if τ is any group topology on G which is coarser than the ambient topology, and for which the completion G_τ is locally compact, we obtain a copy of $A(G_\tau)$ in $B(G)$, and the sum of all of these algebras is the spine. If we restrict ourselves to what we call non-quotient topologies, we may even realise the spine as a direct sum. This algebra admits an appealing structure as a graded Banach algebra, graded over a lattice semi-group. As such we can compute its Gelfand spectrum, which in turn is a semi-group, the *spine compactification* of G. I will illustrate some examples with Lie groups.

This represents part of my joint work with Monica Ilie.