1120-46-278   **Ross Stokke*** (`r.stokke@uwinnipeg.ca`). *Module actions and isometric representations of Arens product algebras.*

Let A be a Banach algebra, X a Banach A-module. I will introduce two associated subspaces of A^* – where A^* is the Banach space dual of A – the Fourier space $\mathcal{F}(A^*)$ and the Eberlein space $\mathcal{E}(A^*)$, and will observe that with respect to an Arens product, their dual spaces $\mathcal{F}(A^*)^*$ and $\mathcal{E}(A^*)^*$ are Banach algebras in which A embeds homomorphically. I will discuss properties of these algebras and, by considering specific examples of module actions – often associated with representations on Hilbert spaces – will recover several classical (and some new) objects and theorems from abstract harmonic analysis. In particular, I will show that $\mathcal{F}(A^*)^*$ always has a weak*-continuous (completely) isometric representation mapping onto a closed subalgebra of operators on X^*, and will thereby recover several representation theorems from abstract harmonic analysis. (Received February 23, 2016)