ROSS STOKKE, University of Winnipeg
Amenability for left dual Banach algebras

Ghahramani, Loy and Willis have shown that the bidual, $L^1(G)^{**}$, of a group algebra $L^1(G)$ of a locally compact group G is amenable only when G is finite. For dual Banach algebras, Connes-amenability – a notion of amenability that takes account of the weak*-topology – is more appropriate than amenability: as just one of many examples, while amenability of a measure algebra $M(G)$ forces G to be discrete, V. Runde has shown that $M(G)$ is Connes amenable exactly when G is an amenable locally compact group. Unfortunately, many Banach algebras that are dual spaces, such as $L^1(G)^{**}$, usually fail to be dual Banach algebras and it therefore does not make sense to consider their Connes amenability.

In this talk, I will introduce a notion of left Connes amenability for left dual Banach algebras over a Banach algebra A and will discuss, for example, a theorem stating that amenability of G is equivalent to left Connes amenability of either $L^1(G)^{**}$ or $LUC(G)^*$, where $LUC(G)$ is the space of left uniformly continuous functions on G.