1047-47-258 **Christian Le Merdy*** (clemerdy@univ-fcomte.fr), Laboratoire de Mathematiques, Universite de Franche-Comte, Besancon Cedex, 25030. *Group representations and R-boundedness.*

Let G be an amenable group and let $C^*(G)$ be its associated group C^*-algebra. Let X be a Banach space and let $\pi\colon G \to B(X)$ be a bounded continuous representation. A well-known theorem (Nagy, Dixmier) asserts that if $X = H$ is a Hilbert space, then π is similar to a unitary representation. Equivalently, π naturally extends to a bounded unital homomorphism $C^*(G) \to B(H)$. Our main result is an extension of this result to the Banach space setting. Under some mild conditions on X, it says that if π is R-bounded, then it extends to a bounded unital homomorphism $\widehat{\pi}\colon C^*(G) \to B(X)$. The notion of R-boundedness relies on Rademacher averages in Banach spaces and will be defined during the talk. If times permits, we will explore more relationships between operator algebras, Banach space homomorphisms and R-boundedness. (Received January 30, 2009)