CLAREMONT CENTER
for MATHEMATICAL SCIENCES

C C M S C O L L O Q U I U M

Reflexivity of Banach lattices and $C(K)$-modules

by

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Abstract: The subject of this talk concerns three areas of Functional Analysis: Banach space geometry, Banach lattices, and Banach $C(K)$-modules, where $C(K)$ represents the Banach algebra of continuous (real or complex-valued) functions on a compact Hausdorff space K.

A Banach space X is called reflexive if, as a set, it is equal to its bidual X''. Typical examples of non-reflexive spaces are c_0 (sequences convergent to zero) and l^1 (absolutely summable sequences). A classical result of Banach space geometry states that "A Banach space with unconditional basis is reflexive if and only if it does not contain any closed subspace that is isomorphic to either l^1 or c_0," (James, 1950). In 1968 Lozanovsky proved that a Banach lattice is reflexive if and only if it does not contain any closed subspace that is isomorphic to either l^1 or c_0.

It is known that a Banach $C(K)$-module with one generator is representable as a Banach lattice. Using this fact and some additional Banach space geometry results in Banach lattice theory, we extend the reflexivity criterion of Lozanovsky to finitely generated Banach $C(K)$-modules; in particular, a finitely generated Banach $C(K)$-module is reflexive if and only if it does not contain any closed subspace that is isomorphic to either l^1 or c_0.

Wednesday, September 25, 2013, at 4:15pm

Davidson Lecture Hall, Claremont McKenna College

Refreshments at 3:45 p.m. in CMC's Math Commons Room (Adams Hall 209) & wine and cheese after the talk in Math Commons Room (Adams Hall 209)

The dinner will be hosted by Prof. Asuman Aksoy.
Please contact Prof. Aksoy if you are interested in attending the dinner