Speaker: Jinxi Chen (USC)

Title: Almost limited sets in Banach lattices

Abstract: We introduce and study the class of almost limited sets in Banach lattices, that is, sets on which every disjoint weak* null sequence of functionals converges uniformly to zero. It is established that a Banach lattice has order continuous norm if and only if almost limited sets and L-weakly compact sets coincide. In particular, in terms of almost Dunford-Pettis operators into c_0, we give an operator characterization of those σ- Dedekind complete Banach lattices whose relatively weakly compact sets are almost limited, that is, for a σ-Dedekind Banach lattice E, every relatively weakly compact set in E is almost limited if and only if every continuous linear operator $T : E \to c_0$ is an almost Dunford-Pettis operator.
This is joint work with Zi Li Chen and Guo Xing Ji