

**Speaker:** N. Spronk (University of Waterloo, Canada)

**Title:** Topologies, idempotents and ideals

**Abstract:** Let  $G$  be a topological group. I wish to exhibit a bijection between (i) a certain class of weakly almost periodic topologies, (ii) idempotents in the weakly almost periodic compactification of  $G$ , and (iii) certain ideals of the algebra of weakly almost periodic functions. This has applications to decomposing weakly almost periodic representations on Banach spaces, generalizing results which go back to many authors.

Moving to unitary representations, I will develop the Fourier-Stieltjes algebra  $B(G)$  of  $G$ , and give the analogous result there. As an application, I show that for a locally compact connected group, operator amenability of  $B(G)$  implies that  $G$  is compact, partially resolving a problem of interest for 25 years.