Nonnegativity for structured complete systems
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We investigate nonnegativity as an obstruction to various forms of structured completeness in Lp spaces. For example, we prove that if each element of a system of functions in Lp is pointwise nonnegative, then the system cannot be an unconditional basis or unconditional quasibasis (unconditional Schauder frame) for Lp. In particular, in L2 this precludes the existence of nonnegative Riesz bases and frames. On the other hand, there exist pointwise nonnegative conditional quasibases in Lp, and there also exist pointwise nonnegative exact systems and Markushevich bases in Lp.

This is joint work with Anneliese Spaeth