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Title: A solution to the generalized contractive projection problem

Abstract: In the sixties, Douglas proved that an isometric copy of an L^1 space inside of a second L^1 space is always contractively complemented. In the early nineties, Kirchberg generalized this result to von Neumann algebras, showing that an isometric copy of the predual of a von Neumann algebra inside the predual of a second von Neumann algebra is always contractively complemented. It is well known that the open unit ball of a von Neumann algebra is a bounded symmetric domain. Dual Banach spaces having this property are known more generally as JBW*-triples, and they have a natural algebraic characterization in terms of a ternary product. In this talk, we will completely solve the above contractive projection problem for preduals of JBW*-triples, answering a conjecture of Ng and Ozawa. We will also explain why JBW*-triples constitute the most natural setting for this question. One of several reasons for this claim is the fact that, as Kaup proved in the eighties, the range of a normal contractive projection on a JBW*-triple is isometric to another JBW*-triple, a stability property that fails for von Neumann algebras. Finally, we will discuss connections with similar questions in operator space theory. This is joint work with Bernard Russo.