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Local-to-global tracial transfer of C*-algebra properties

In work on the Toms-Winter conjecture, a property called CPoU (complemented partitions of unity) was developed which provided a bridge between von Neumann algebra theory and C*-algebras. To be precise, it was used to prove that certain properties of tracial von Neumann algebras also hold for the uniform tracial ultraproduct of C*-algebras with CPoU. This has led to further applications in a new approach to the classification of C*-algebras.

However, the property was in many ways unsatisfactory due to a disconnect between what the property CPoU says and what it is really used for. I will discuss a model-theoretic analysis, which allows us to establish an equivalent* property (*: up to a small technicality), which captures much better how one should think of CPoU.