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*Extension theorems for large scale spaces via neighborhood operators*

Coarse geometry is the study of the large scale behavior of spaces. The motivation for studying such behavior comes mainly from index theory and geometric group theory. In this talk we introduce the notion of (hybrid) large scale normality for large scale spaces and prove analogues of Urysohn's Lemma and the Tietze Extension Theorem for spaces with this property, where continuous maps are replaced by (continuous and) slowly oscillating maps. To do so, we first prove a general form of each of these results in the context of a set equipped with a neighborhood operator satisfying certain axioms, from which we obtain both the classical topological results and the (hybrid) large scale results as corollaries. We prove that all metric spaces are large scale normal, and give some examples of spaces which are not hybrid large scale normal. Finally, we look at some properties of Higson coronas of a hybrid large scale normal spaces. Joint work with Thomas Weighill.