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Yun Lu* (lu@kutztown.edu), Mathematics Department, Kutztown University of PA, Kutztown, PA 19530. *Strong Finite Submodel Property of Countable Categorical Graphs.*

This talk investigates the application of Borel-Cantelli Lemma to prove the Strong Finite Submodel Property of countable categorical graphs. A countable structure Γ is said to have the Strong Finite Submodel Property if Γ can be written as a union of increasing substructures Γ_i where $|\Gamma_i| = i$, and for all sentences ϕ true of Γ there is an N such that $i > N$ implies ϕ is true of Γ_i .

The Borel-Cantelli Lemma was applied by Simon Thomas in 1996 to simplify a complicated model theoretic proof of the Strong Finite Submodel Property of random hypergraphs. In this talk we will discuss Thomas' approach and our results on the Strong Finite Submodel Property of random bipartite graphs. (Received September 12, 2013)