Fraïssé limits of uncountable size

Jacob D. Page

Preprint no. 2026-08

Abstract

In 1954, Roland Fraïssé developed a theory involving countable objects that had what is known in this paper as the finite extension property. Countable structures with this property, known as Fraïssé limits, are unique up to isomorphism, as well as possess several other nice model theoretic properties. Fraïssé was able to show that the existence of these structures depended on properties of the space of its finite substructures, known as its age. This thesis aims to generalize this theory into the context of larger cardinalities. First, it will be confirmed that ages that produce Fraïssé limits can also produce similar structures at higher cardinals. Second, it will be shown that certain ages that cannot produce such countable structures are still able to produce uncountable structures with the same desired properties.

Department of Mathematics, UNC Charlotte, Charlotte, NC 28223