

Endomorphism monoids of countable homomorphism-homogeneous relational systems

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Recently, P. J. Cameron and J. Nešetřil introduced a relaxed version of homogeneity: we say that a structure is homomorphism-homogeneous if every homomorphism between finitely induced substructures of the structure extends to an endomorphism of the structure.

In this talk we consider endomorphism monoids of countable homomorphism-homogeneous structures. We introduce the notion of oligomorphic transformation monoids and show that endomorphism monoids of countable homomorphism-homogeneous relational structures over finite relational languages are oligomorphic. We then show the following analogue of the Ryll-Nardzewski theorem: an endomorphism monoid of a countable relational structure is oligomorphic if and only if for all $n \in \mathbb{N}$ the structure realizes only finitely many complete positive n -types, and each of them is principal.