CONNECTIONS BETWEEN ALGEBRAIC CATEGORIES: NATURALLY MAL'TSEV, MAL'TSEV AND WEAKLY MAL'TSEV

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In this talk we give a survey of the known similarities and major differences between the three levels of Mal'tsev categories listed in the title. In each case, to every split square, there is a canonical morphism which can be considered as a characteristic morphism whose strength is determined by the level of the Mal'tsev category: split epimorphism for naturally Mal'tsev, strong epimorphism for Mal'tsev and epimorphism for weakly Mal'tsev. Some consequences of a coincidence of commutators, which are always defined in these cases, are also illustrated, namely the ones concerning the coincidence between internal categorical structures such as internal groupoids, internal categories, multiplicative graphs or reflexive graphs.

This is a report on the work developed in the last three years in one of the tasks of the project "Categorical Methods in Non Abelian Algebra".

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