

The Ax-Kochen-Ershov Theorem with a view on tame fields

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Abstract

In 1965 James Ax, Simon Kochen and, independently, Yuri Ershov proved a remarkable theorem in the model theory of valued fields. Their work yields various important model theoretic properties of the theory of (some classes of) valued fields. Further, Ax and Kochen were also able to apply their result to solve a long standing conjecture of Emil Artin in number theory. Since then the techniques used by Ax, Kochen and Ershov have been further developed and their results generalized in various directions. Starting from the original statement we will discuss these techniques in the setting of tame fields, which have been introduced by Franz-Viktor Kuhlmann.