

Ax-Kochen-Ershov Principles for Valued Abelian Structures

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The Ax-Kochen-Ershov principle (or AKE-principle) states that henselian valued fields of equicharacteristic $(0, 0)$ are model complete relative to their value groups and residue fields. Since this pioneer work, logicians have studied many other model-theoretic properties of henselian valued fields and reduced them to the value group and the residue field. In this talk, I will explain how this approach can be applied in other contexts, notably in valued vector spaces and in ordered abelian groups. I will explain how some classical results (such as the theorem of Gurevich and Schmitt) can be seen as AKE-like principles, and state various new relative results for model completeness, NIPness and stable embeddedness.

References

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- [2] Touchard, Pierre, *On Model Theory of Valued Vector Spaces*, arXiv:2111.15516, 2021.
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