

On ordered fields dense in their real closure

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Abstract: In joint work with L. S. Krapp and G. Lehericy (arXiv:1810.10377), we undertake a systematic study of ordered fields which are dense in their real closure. In this talk, after summarizing the real algebraic background (including a related discussion of ordered abelian groups dense in their divisible hull), I will present our valuation theoretic characterization of density. Our results apply to definability of convex valuations in the context of a conjecture of Shelah on (strongly) dependent fields, and to integer parts of real closed fields. I conclude the talk by presenting two open questions concerning ordered fields that are dense in their real closure.

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