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Definable Compactness in Non-valuational Weakly O-minimal Structures

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Let $\mathcal{M} = (M, <, +, \dots)$ be a non-valuational weakly o-minimal expansion of an ordered group $(M, <, +)$. In this paper, we extend the notion of definable compactness suitable for weakly o-minimal structures which was examined for definable sets in [1], and prove that a definable set is definable compact if and only if it is closed and bounded. We also show that curve selection property holds in \mathcal{M} .

References

- [1] Y. Peterzil, C. Steinhorn, Definable compactness and definable subgroups of o-minimal groups, *J. London Math. Soc.* vol. 295 , 769-786 (1999).