

Wilkie, A. J.

A theorem of the complement and some new o-minimal structures. (English) Zbl 0948.03037
Sel. Math., New Ser. 5, No. 4, 397-421 (1999).

A prestructure is a sequence (S_n) where S_n is a collection of subsets of \mathbb{R}^n . It is a structure if the S_n are Boolean algebras, contain the semi-algebraic subsets of \mathbb{R}^n , and for $m > n$ the projection of S_m is contained in S_n . A structure is o-minimal if the boundary of every set in S_1 is finite.

It is known that \mathbb{R}_{an} , the structure of globally analytical sets, is o-minimal. Another example of an o-minimal structure is \mathbb{R}_{exp} , which is generated by the sets of the form $f^{-1}(0)$, where $f : \mathbb{R}^n \rightarrow \mathbb{R}$ is an exponential polynomial.

The author investigates $\mathbb{R}_{\text{Pfaff}}$, the prestructure of the sets $f^{-1}(0)$ with $f : \mathbb{R}^n \rightarrow \mathbb{R}$ Pfaffian. He shows that the structure generated by $\mathbb{R}_{\text{Pfaff}}$ is o-minimal. It is not known whether $\mathbb{R}_{\text{Pfaff}}$ is closed under complementation.

Reviewer: M.Weese (Potsdam)

MSC:

- 03C64 Model theory of ordered structures; o-minimality
- 03C10 Quantifier elimination, model completeness and related topics
- 14P10 Semialgebraic sets and related spaces

Cited in **6** Reviews
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Keywords:

Pfaffian function; o-minimal structure; prestructure

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