

1016-03-37

Jean-Marie Lion and **Patrick Speissegger*** (speisseg@math.mcmaster.ca), Department of Mathematics & Statistics, 1280 Main Street West, Hamilton, Ontario L8S 4K1, Canada. *The Theorem of the Complement for Sub-Pfaffian Sets.*

Let \mathcal{R} be an o-minimal expansion of the real field, and let $\mathcal{P}(\mathcal{R})$ be its Pfaffian closure. Let \mathcal{L} be the language consisting of all Rolle leaves added to \mathcal{R} to obtain $\mathcal{P}(\mathcal{R})$. We prove that $\mathcal{P}(\mathcal{R})$ is model complete in the language \mathcal{L} , provided that \mathcal{R} admits analytic cell decomposition. We do this by proving a somewhat stronger statement, the theorem of the complement for nested sub-Pfaffian sets over \mathcal{R} . As a corollary, we obtain that $\mathcal{P}(\mathcal{R})$ is obtained by adding to \mathcal{R} all nested Rolle leaves over \mathcal{R} , a one-stage process. (Received January 14, 2006)