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Continuous Definable Skolem Functions in O-minimal Structures

It is well-known that o-minimal expansions of real closed fields admit definable Skolem functions; additionally, by cell decomposition theorem, these functions are piecewise continuous. Unfortunately, we cannot find continuous Skolem functions for every definable family. This leads to the question what is a sufficient condition (on the definable family) of the existence of such functions. In this talk, we consider definable families as set-valued maps and prove an analogue of Michael's Selection Theorem in o-minimal expansions of real closed fields. This theorem provides an answer to the above question.