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Pablo Andújar Guerrero* (pandujar@purdue.edu). *Types and intersection properties in o-minimal theories.*

We consider different intersection properties among definable families of sets in o-minimal structures. The weakest of these is the (p, q) -property for some $p \geq q$, which states that, for every p sets in the family, some q intersect. Our thesis is as follows: among families of sets of low complexity, a weak intersection property implies a strong one. Our main result states that any definable family in an o-minimal structure with the (p, q) -property for p and q large enough can be partitioned into finitely many subfamilies, each of which expands to a complete definable type. We frame this result in terms of VC theory, in particular Matousek's (p, q) -theorem, and known bounds in VC-density among definable families in o-minimal (and other NIP) theories. If time allows, we will address the application of this result in characterizing the topological notion of definable compactness, and in reproving, in the o-minimal setting, the known equivalence between non-forking of formulas and containment in definable types. (Received February 04, 2020)