DEFINABLE CLUBS

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ABSTRACT. In my talk, I want to present results from an ongoing project with Omer Ben-Neria (Jerusalem) that studies definable closed unbounded subsets of uncountable cardinals, focussing on large cardinals and singular cardinals. These results show that, for certain collections of formulas and classes of parameters, important combinatorial properties of the given cardinal are reflected in the collection of ordinals that are contained in all closed unbounded sets that are definable in the given way. For example, if the first limit cardinal $\aleph_\omega$ is Jónsson, then this has various non-trivial implications on the collection of closed unbounded subsets of $\aleph_\omega$ that can be defined by Σ_1-formulas with parameters in $H(\aleph_\omega) \cup \{\aleph_\omega\}$, and these consequences can be used to restrict the class of possible models of set theory in which $\aleph_\omega$ is Jónsson.