Computability and uncountable structures

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What can we say, using methods from computability, about uncountable structures such as the reals? There are different approaches. Some approaches involve changing the basic notions of computability. Using Hamkin's Infinite-Time Turing machines, or Yue Yang's Master-Slave machines, or definitions from α-recursion theory (with an unpleasant set-theoretic assumption), we see that the ordered field of reals is a computable structure. Noah Schweber defined a notion that lets us compare the computing power of structures of any cardinality, using the standard notions of computability. We say that $\mathcal{A}$ is *Schweber reducible* to $\mathcal{B}$ if after we collapse cardinals so that the two structures become countable, every copy of $\mathcal{B}$ computes a copy of $\mathcal{A}$. I will describe results applying Schweber reducibility to some structures related to the reals.