GENERAL REDUCIBILITIES FOR SETS OF REALS

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Intuitively, a set of reals A is *simpler* than — or as complex as — a set of reals B if the problem of verifying membership in A can be reduced to the problem of verifying membership in B. This observation has led W. Wadge to introduce the notion of *continuous reducibility*, where A is reducible to (i.e. simpler than) B if there is some continuous function $f : \mathbb{R} \to \mathbb{R}$ such that $f^{-1}(B) = A$. The study of this relation (on the Baire space) has led to the development of a very rich and fascinating theory, now known as Wadge theory. We will give a brief history of some of the most important results in this area and present a very general approach to the study of various notions of reducibility on the Baire space.

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