

- ▶ JOHANNA N.Y. FRANKLIN, *Difference randomness*.  
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In this talk, I will define new notions of randomness based on the difference hierarchy. First, I will describe various ways in which a real can avoid all effectively given tests consisting of  $n$ -r.e. sets for some given  $n$ . In each case, the  $n$ -r.e. randomness hierarchy collapses for  $n \geq 2$ . One of the resulting notions, difference randomness, results in a class of random reals that is a strict subclass of the Martin-Löf random reals and a proper superclass of both the Demuth random and weakly 2-random reals. In fact, the difference random reals are precisely the Turing incomplete Martin-Löf random reals. I will then define a notion of  $\omega$ -r.e. randomness and discuss other subclasses of the reals that are  $\omega$ -r.e. random.

This work is joint with Keng Meng Ng.