▸ ARMANDO MATOS, ANDRE SOUTO, ANDREIA TEIXEIRA, *Distinguishing probability ensembles.*
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We generalize the concept of distinguishability, based on the input or the output of the randomized, polynomial-time distinguishing algorithms. First we consider algorithms with an arbitrary integer output (instead of just 0 or 1) and prove that, when the output is bounded by a polynomial, these distinguishers are no more powerful than a variant of the classical (computational) one in which the algorithms may have a short advice (order $O(\log n)$). Then, we characterize a distinguishing method in which two samples, one from each ensemble, may be given as input to the algorithm (the case of two or more samples of the *same* ensemble as input has already been studied in [**?**, **?**]) and we study the properties of this new distinguishing method. Finally, we use, as distinguishers, algorithms that are lossless compressors and output the *length* of the compressed string; somewhat surprisingly, any pair of classically distinguishable ensembles, is also distinguishable by the length of the output of some compressor.