

On bootstrap tests of hypotheses

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The bootstrap method is sometimes used to test hypotheses when the statistical model is too complex to be studied analytically. For example, Ane, Burleigh, McMahon, and Sanderson (*Molecular Biology and Evolution*, 2005) use the method to test a certain molecular evolution hypothesis that involves stochastic processes. In this talk, we analyze the validity and power of the bootstrap test in some simple problems that permit theoretical analysis. The results are somewhat surprising.