Profile Likelihood Analysis

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Done

- 1. Installed: Blueice, pax and laidbax(Xenon1T likelihood fitting code)

- 2. Basic understanding of hypothesis test

Problems

- For pax, I followed the steps in Readme to test if the installation is working, it failed:
pkg_resources.DistributionNotFound: The 'python-snappy' distribution was not found and is required by pax

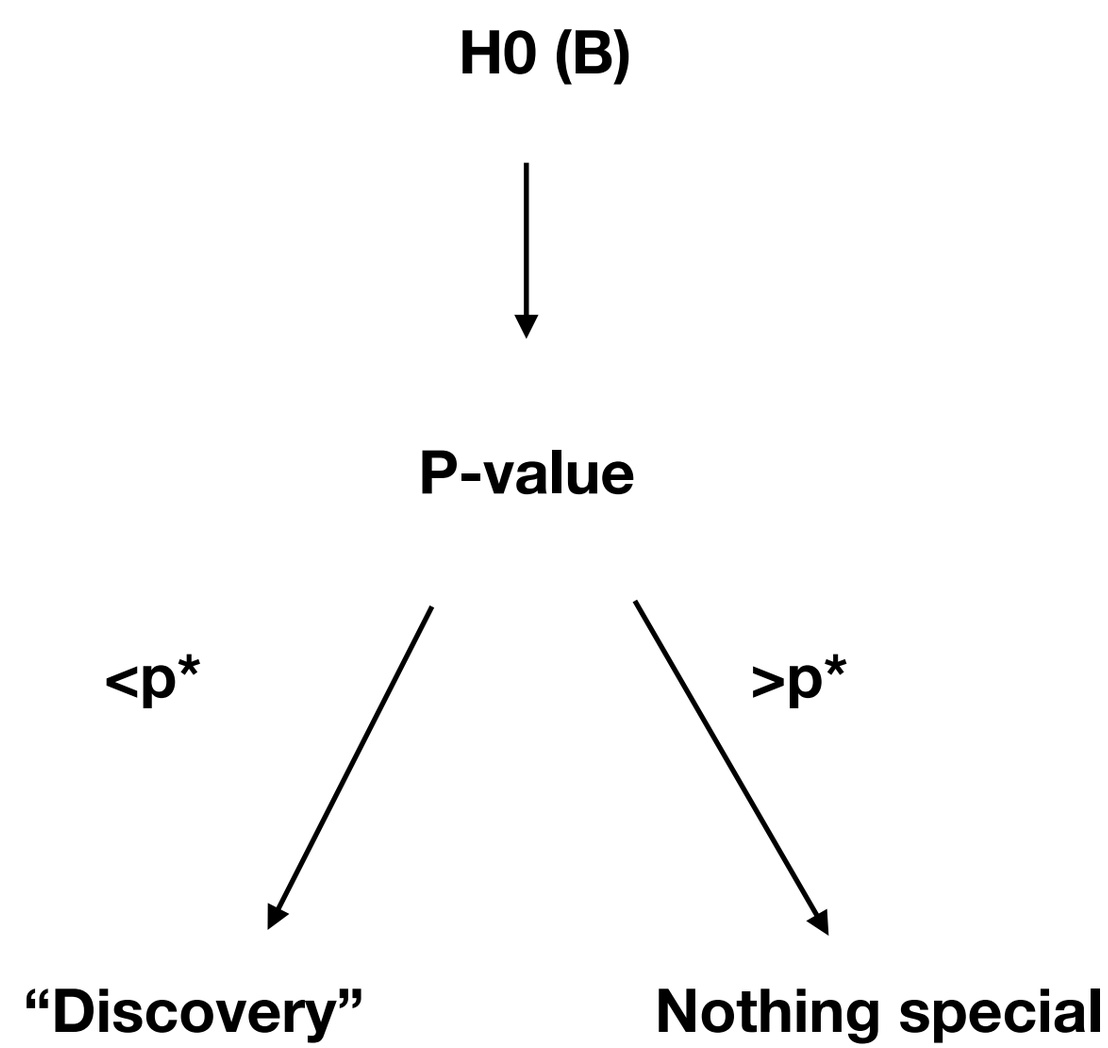
Hypothesis Testing

- The basic idea is to accept or reject a hypothesis by formulating two opposing hypotheses: the null hypothesis and alternative hypothesis.

- For discovering a new signal, define two hypothesis: H0(only known process/background) and H1(background+signal).

- To accept or reject H0/H1, calculate the p-value, the probability under that assumption.

- In particle physics, p-value —> Z(significance)


H0 (B)
P-value
<p*
>p*
“Discovery”
Nothing special

To Do

- 1. Profile Likelihood Ratio

- 2. Look through the codes and play with them?