EFT Update

2018/09/04

At long last, the bug identified!

Quote from mRoot Forum help:

The underlying issue is that proxy lists of pdfs are now stored in TRefArrays rather than TObjArrays
because the latter was giving problem when persisting certain classes of pdfs. As part of its operational magic a TRefArray stores unique object IDs rather than pointers.
However, the uids stored in TRefArray consists of a 24-bit UID part and a 8-bit PID part that are managed by TProcessID. Once more than 16777216 UIDs have been assigned (hex 0x1000000) TProcessID will continue to assign higher UID numbers, but the uid->obj conversion simply chops bits 25-32 off these high ID numbers so that a call to GetObjectWithID(16777216+i) returns the object assigned to UID i, which may be a very different object (or in many cases a null pointer).

Workaround

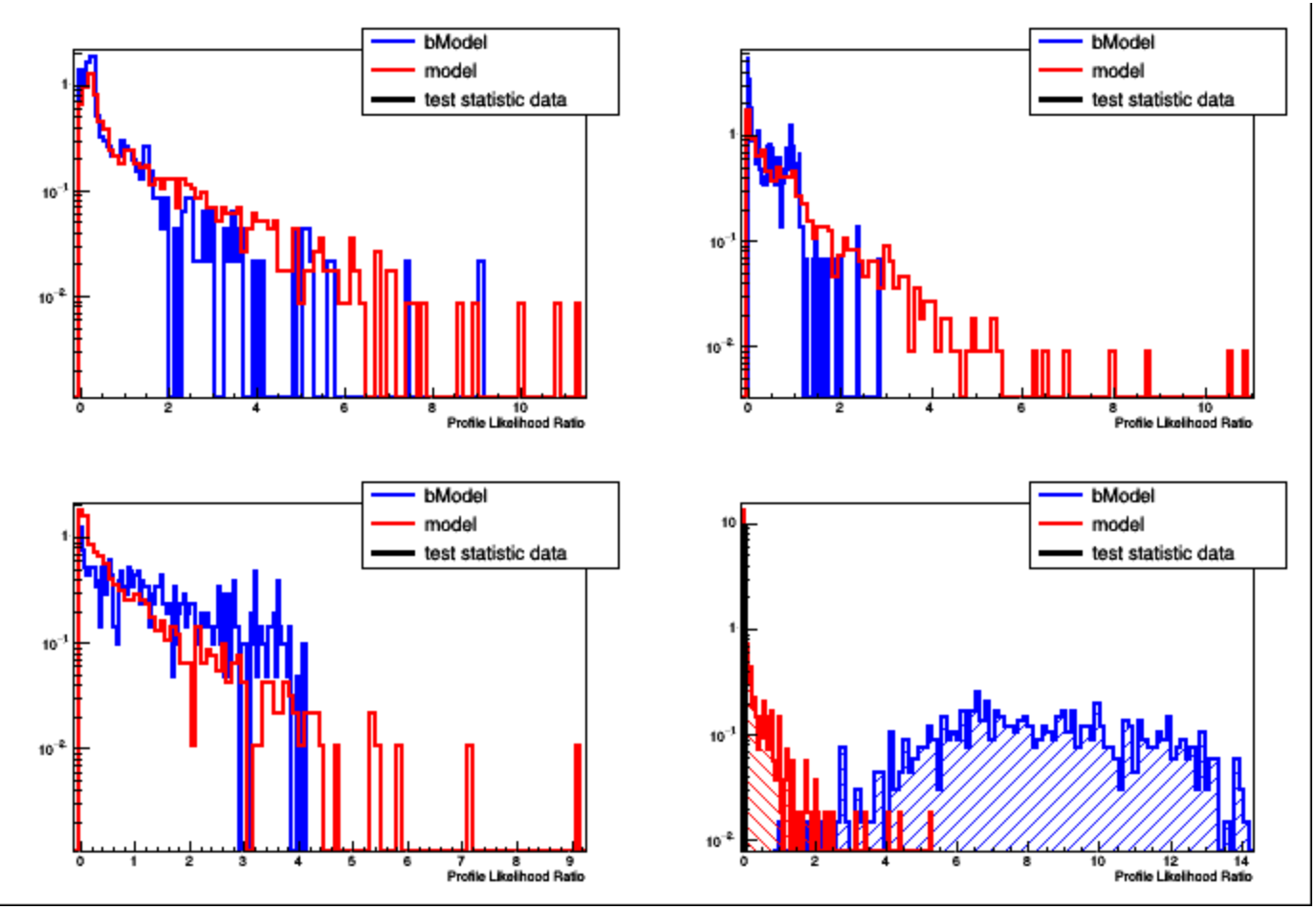
- Create fewer PDFs!
- A PDF is created for each value of nuisance parameter and each value of POI to test (and each PDF is an amalgam of ~150 sub-PDFs)
- Test fewer POI points in a run and combine them after the fact

Result!

Red is null hypothesis (WIMP exists with given POI)

Blue is alternative hypothesis (WIMPs do not exist)

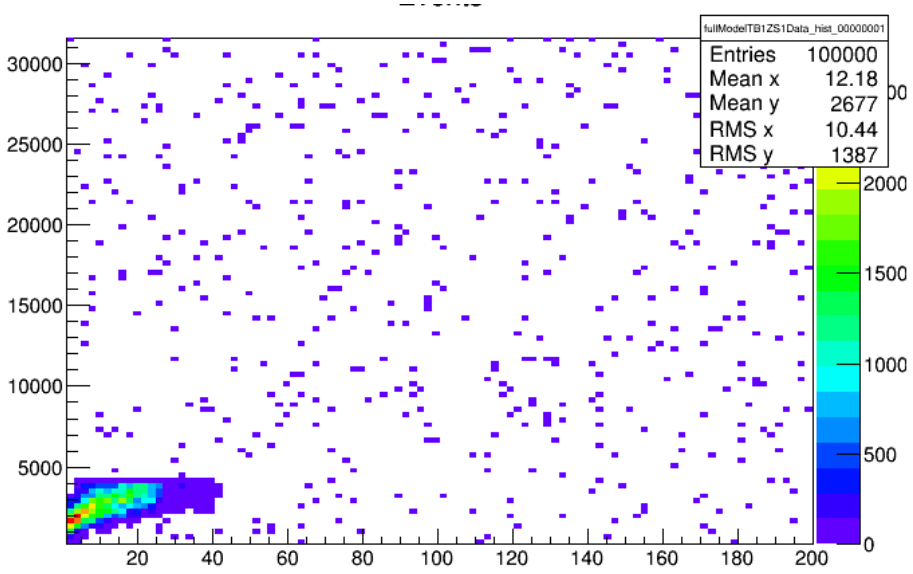
Black is the test statistic obtained from our run.



Something's wrong...

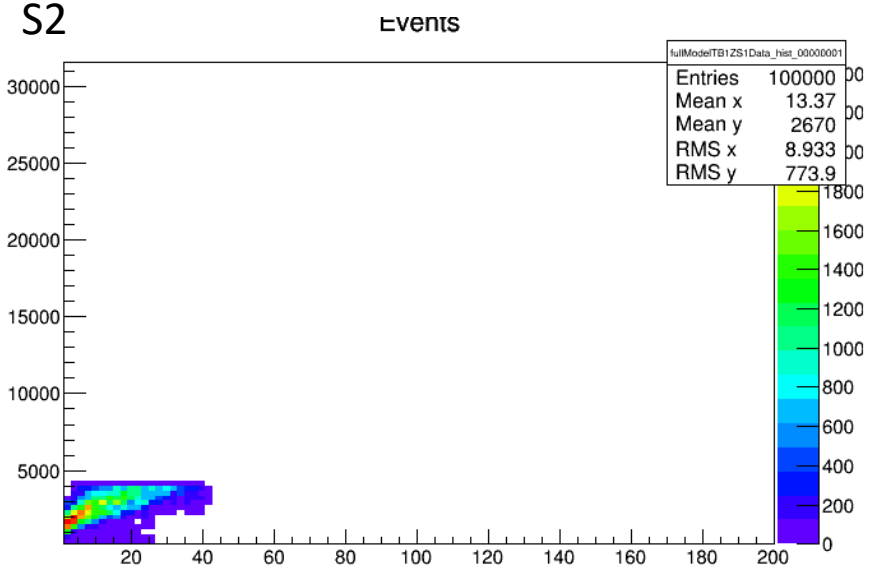
Attempting to plot the models as-seen in the PLR

S2



Old dummy wall model

S2

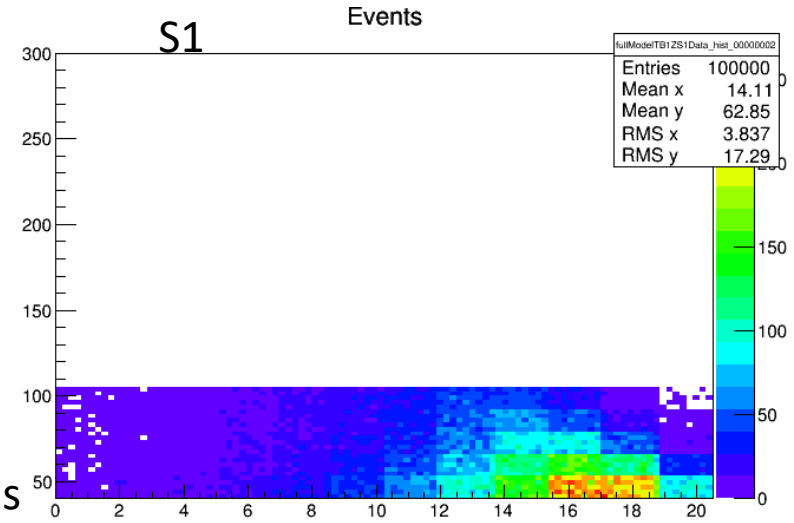


S1

New dummy wall model

drift

S1



radius