

Table of Contents

mmTool	1
Description.....	1
Usage.....	1
Definition of Loose/Tight selection.....	1

mmTool

The mmTool provides a QCD estimation done using the Matrix Method with ATLAS Data of 2011 (periods B2 to D5, for a total integrated luminosity of 117.2pb^{-1}) in lepton+jets **muon channel**. The tool (attached at the end of this page) is an update from mmTool for 2010

Description

The tool provides a function, `get_MM_weigh`, which returns a weight to be applied (eventually combined with the other weights for the event) to the data to obtain an estimation for QCD. So, running on data, weighting event by event you will obtain a QCD sample. See also this presentation given at the top fakes meeting on May 18th, 2011 for more details.

Usage

The function:

```
double get_MM_weight (bool isLoose, bool isTight, double varEta, double varLJpT, double varMinDR, bool ele, int jets25inevent, int bjetsinevent)
```

takes 8 parameters in input:

- `bool isLoose` true if the muon passes "loose" selection (see below)
- `bool isTight` true if the muon passes "tight" selection (see below)
- `double varEta` muon
- `double varLJpT` leading jet p_T in GeV
- `double varMinDR` minimum ΔR between the muon and jets (jets with $p_T > 20$ GeV)
- `bool ele` true if the lepton is an electron; **function works only for muons**
- `int jets25inevent` number of jets (with $p_T > 25$ GeV and $|\eta| < 2.5$) in events; **parametrization for leading jet p_T and min ΔR is applied only if more than 0 jets**
- `int bjetsinevent` number of b-tagged jets in events

Definition of Loose/Tight selection

For doubts refer also to the PLHC common definition of objects

requirement	Loose	Tight
muon isTight	x	x
muon pass ID cuts	x	x
muon isCombinedMuon	x	x
min $\Delta R(\mu, \text{jet}) > 0.4$	x	x
e-mu overlap removal	x	x
ptcone30 < 4 GeV		x
etcone30 < 4 GeV		x

-- AntonellaSuccurro - 20-May-2011

- `mmTool20110520.cxx`: tool for QCD prediction from data

This topic: Main > NewMMTool2011

Topic revision: r1 - 2011-05-20 - AntonellaSuccurro



Copyright &© 2008-2019 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.
Ideas, requests, problems regarding TWiki? Send feedback