

Table of Contents

TriggerTisTos tool.....	1
Documentation.....	1
Links to related pages.....	1
Comments to various DaVinci releases.....	1

TriggerTisTos tool

Some parts of documentation below are not up to date. Please see presentation at Trigger & Stripping meeting on Nov 1, 2010 [↗](#) for the most recent report on TisTos software. If you are using Stripping MicroDSTs please also read StrippingMDSTsTisTos page.

TriggerTisTos tool classifies triggers (L0 or Hlt) as TIS (Trigger Independent of Signal) or TOS (Trigger On Signal) with respect to user defined signal (e.g. B candidate). It can also be used to access summaries of candidates selected by the Trigger algorithms and saved in Raw Data.

There is also TESTisTos tool which can be used to classify selections saved in TES, stripping decision in particular.

If you are using TupleToolTISTOS for your Tis/Tos info, you may want to read How Do I configure TupleToolTrigger and TupleToolTISTOS? page. TupleToolTISTOS in DecayTreeTuple is an additional layer of software which calls TriggerTisTos tool described here.

If you are interested in Tis/Tossing L0 trigger, please refer to L0TriggerTisTos twiki.

There is now TisTosParticleTagger which can be used to set-up filtering of Particles with respect to TisTos criteria, or to filter Events. Please refer to separate page for documentation.

Documentation

- The user interface of the tool is defined in ITriggerTisTos.h which contains also some documentation. See Doxygen documentation of the DaVinci project [↗](#). Make sure to follow link also to ITriggerSelectionTisTos from which ITriggerTisTos inherits.
- More extensive documentation with code examples can be found in various presentations (use the first one listed for the most recent one, though even this version is a bit obsolete):
 - ◆ Update on TisTos software, Nov 1, 2010, Trigger & Stripping meeting [↗](#)
 - ◆ Hlt Raw Data & TISTOS tool (C++ & Python) June 16, 2009, LHCb SoftwareWeek [↗](#).
 - ◆ Hlt Raw Data & TISTOS tool, Mar 19, 2009, LHCb Software Week [↗](#).
 - ◆ Hlt Data and Usage, Dec. 11, 2008, LHCb Software Week [↗](#).
 - ◆ Trigger Info and TisTosTobbing Tutorial, Sep. 16, 2008, LHCb Software Week [↗](#).
 - ◆ Python version of TisTosTobbing Tutorial, June 18, 2008, LHCb Software Week [↗](#).
 - ◆ "Trigger and TisTos Tutorial", Oct.2, 2007, LHCb Software Week [↗](#)
 - ◆ "TisTosTobbing", Sept.13, 2007, Plenary III at LHCb Week at St Nectaire [↗](#)
 - ◆ "Status of TisTosTobbing", Sep.5, 2007, Tagging, proptime and mixing WG meeting [↗](#)
 - ◆ "TisTosTobbing without tampering", T-Rec, December 2005 [↗](#)

Links to related pages

- Tool to properly Tis/Tos L0 (up-to-date).
- Using TriggerTisTos tools in python (up-to-date)
- Using TisTos software with MicroDSTs (up-to-date)
- TisTosDVExample - complete example for DaVinci C++ Algorithm using TriggerTisTos tool (this is very old and needs updating!).
- Hlt triggers naming convention

Comments to various DaVinci releases

- DaVinci v29r0,v29r1

TriggerTisTos < LHCb < TWiki

New set-up is needed for Stripping 17 MDSTs - see StrippingMDSTsTisTos page.

- DaVinci v28r2p2 and similar

New 2011 DiMuon trigger is not yet supported in these releases. "getpack Phys/TisTosTobbing r122889" to make it work.

- DaVinci v26r3p2

No known problems.

- DaVinci v26r3

Contains support for TisTossing schemes on MDSTs. Slight change in L0 TisTos of Muon triggers (use Trig/L0/MuonBCSU instead of Trig/L0/MuonCtrl). Fixes the bugs outlined below. However, it does contain bug for L0 trigger - see L0TriggerTisTos twiki.

- DaVinci v26r1,r2,r2p1

Results for "Hlt1.*Decision" wrong for most of 2010 data because of Hlt1L0.*Muon.*Decision (applies to all previous versions too). See slide 19 in presentation at Trigger & Stripping meeting on Nov 1, 2010 [☞](#).

If you re-run L0+HLT triggers (using 1Track Hlt1 scheme) in DaVinci you must add:

```
from Configurables import L0Conf
L0Conf().FullL0MuonDecoding = True
L0Conf().EnableL0DecodingOnDemand = True
```

otherwise your results for muons will be inaccurate and for hadrons completely wrong.

- DaVinci v25r7

Major rewrite of the code (Phys/TisTosTobbing v5r0; Phys/DaVinciInterfaces v2r5). More information will be provided. matchedTOSxxx methods were retired from the interface. Muon hit TOS threshold lowered from 0.7 to 0.6. A lots of new methods to provide new functionality (the old methods will still work as well). See also TisTosParticleTagger.

- DaVinci v25r6

No known problems. This version includes L0TriggerTisTos tool.

- DaVinci v25r5.

No known problems. However, this and all earlier versions do not let you Tis/Tos L0 trigger to good accuracy (particularly L0DiMuon is affected). Please refer to L0TriggerTisTos info.

- DaVinci v24r5p1

No known problems.

- DaVinci v24r4

To work on slc5 platform you need to getpack Phys/TisTosTobbing v3r6 or higher (get a head version if this tag is not available yet) otherwise jobs can sometimes crash on the first event processed by the tool. slc4 platform appears to be fine.

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There was a change in the tool catalog of known trigger names. In the previous version all names registered with HltANNSvc were considered valid trigger names, which in practice meant that there were a lot of spurious triggers in Hlt1 part. Now the trigger names are restricted to those appearing in HltDecReports which ensures that only executed triggers are known to the tool. Intermediate trigger selection names are restricted to those saved in HltSelReports. A consequence of these changes is that the list of known trigger names can vary from MC event to MC event (e.g. if L0 failed and Hlt was not executed, there will be no known trigger names). Real data event all passed Hlt, thus the trigger list will not vary for the same TCK, however list of intermediate selection names can still vary from event to event depending which ones were saved in HltSelReports. The tool no longer complains if the user asked for a trigger selection which is not found (the warning can be reactivated via a property of the tool); the tool will silently return default values (decision=false; tis=false; tos=false).

- DaVinci v24r3p1, v24r2p2

Do not use these version. There are problems in Calo code which cause crashes sometimes in Tis/Tos software.

- DaVinci v24r2

IMPORTANT! From this version now on, wild character matching in the trigger specifications passed to the tool is handled by regex (see e.g. [Regular Expression Tutorial](#)). This provides for more functionality. Users must change their code to replace any occurrence of '*' by '.' (for example 'Hlt1*Decision' must be replaced by 'Hlt1.*Decision').

- DaVinci v22r1, v22r2, v22r3, v23r0p, v23r1, v24r1

No known problems. Options to run trigger simulations on DC06 data:

```
from Gaudi.Configuration import *
from Configurables import DaVinci
DaVinci().ReplaceL0BanksWithEmulated = True ## enable if you want to rerun L0
DaVinci().HltType = 'Hlt1+Hlt2'           ## pick one of 'Hlt1', 'Hlt2', or 'Hlt1+Hlt2'
```

-- TomaszSkwarnicki - 11 Oct 2007, last update 1 Nov 2011

This topic: LHCb > TriggerTisTos

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