

# Status of stop -> 2lepton search CMS-SUS-17-001

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea09-CMS-SUS-17-001>

Choi Soo-Min,  
Jeong Sumin,  
Kang Dong  
Woo, Li  
Jinmian, Sam  
Bein, Jory  
Sonneveld

**Code:** Still in development

**Signal production:** 2 T2tt samples completed (need to sim DM)

**Validation note:** Not started

**issues/status**

- Delphes tcl card: problem that went away on changing xqcut (?)
- First few lines in MA5 analysis initializing weights were missing -> 'no events' analyzed. Now added and everything is fine.
- Need to check if the cross section is stable with respect to the xqcut.
- Need to figure out how to compute limits including correlations (given! =)).
- DM model not clear what is used (what Feynrules model?)

e.g. [this card](#) `import model DMPseudoscalar_ttbar01j_mphi_10000_mchi_1_gSM_1p0_gDM_1p0`

# Status of longlived search CMS-SUS-16-022

Chang Jung,  
Kang Dayoung,  
Wu Peiwen,  
Yang Seungjin  
Sam Bein, Jory  
Sonneveld

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea01-CMS-EXO16-022>

**Code:** being written (d0 accessible in MA5 since this morning)

**Signal production:** done

**Validation note:** not started

## Issues/status

- Still no comparison with official CMS numbers

# Status of dilepton+MET CMS-EXO-16-052

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea05-CMS-EXO-16-052>

Jeon Dajeong,  
Kim Seulgi,  
Lee Sang  
Man, Watson  
Ian James,  
Sam Bein,  
Jory  
Sonneveld

**Code:** source code written, missing a couple of vetoes

**validated on one signal region: within a few percent! =)**

**Signal production:** ongoing; one of four models completed; updated to use NLO for spin-1 DM model.

**Validation note:** not started?

## Issues/status

- Some confusion about the naming of the models, may need to ask CMS

# Status of Monohiggs CMS-EXO-16-012

Yongsoo Jho, Jiwon Park, An Seohyun, Wenxing Zhang, Guillaume Chalons, Jory Sonneveld

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea02-CMS-EXO-16-012>

**Code:** Almost done implementing analyses

**Signal production:** ongoing, hepmc readybut still looking for efficiencies to use in delphes

**Validation note:** not started?

## Issues/notes

- Trigger: will ignore unclear photon trigger:  
“Diphoton triggers with asymmetric transverse energy thresholds (30/18 GeV) are used to select events with the diphoton invariant mass above 95 GeV”  
There is a diphoton mass  $> 100$  GeV cut for which this trigger was used.
- 100,000 events (same as CMS)  $\rightarrow$  200 photons

# Status of VLQ arXiv : 1705.10751

Li Gang, Park Yeji, Ui  
Min, Xu Fangzhou, Dipan  
Sengupta

<https://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PAPERS/EXOT-2016-15/>

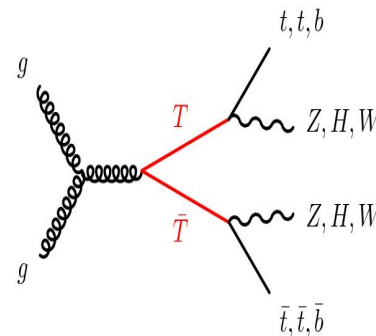
**Code:** Almost done implementing analyses

**Signal production:** Protos cannot be compiled, author contacted.

**Validation note:** not started?

**Issues :** Some ambiguities in the way asymmetric  $MT_2$  is defined.

Efficiency of tau leptons and b-jets.



# Status of Higgs + DM arXiv: 1707.01302

<https://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PAPERS/EXOT-2016-25/>

**Code:** Almost done implementing analyses

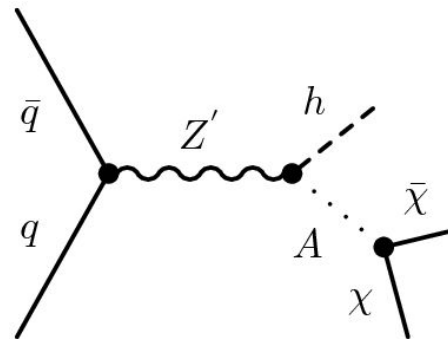
**Signal production:** ongoing

**Validation note:** not started?

## Issues :

- UFO was not present -- given to us by ATLAS

Jeon Sihyun, Kang  
Yoo-Jin, Lee GyungGoo,  
Yu Chaehyun , Dipan  
Sengupta



# Status of Monophoton (ATLAS-EXOT-2016-32)

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea07-ATLAS-EXOT-2016-32>

Tae Hyun Jung  
Kyung Sun Lee  
Tae Geun Kim  
Seungwon Baek  
Guillaume Chalons

-Code: Writing is almost done (see issues)

- Signal production: All info at hand, in a second step

- DELPHES card: Start with the one available on the PAD for ATLAS 13 TeV

- Validation Note: Not started, 1 Cutflow available

- Issues: Computation of MET/Sum( $E_T$ ) a bit tricky but solution found, to be implemented

# Status of multilepton+jets (CMS-SUS-16-041)

<http://madanalysis.irmp.ucl.ac.be/wiki/Korea04-CMS-SUS-16-041>

Byeonghak Ko  
Tae Gyu Ro  
Jubin Park  
Kyeongpil Lee  
Guillaume Chalons

-Code: Writing is done, tested on dummy sample

- Signal production: Production info available, simulation ongoing

- Validation Note: Not started, 2 Cutflows available

- Issues: Implementation of the Isolation to be discussed



# Status of ttZ / ttW

Eric Conte, Benjamin Fuks, Flacke Thomas,  
Jeong Yong Ho, Kim Minho, Kim U-Rae

**WIKI:** [madanalysis.irmp.ucl.ac.be/wiki/Korea08-ATL-PHYS-PROC-2016-117](http://madanalysis.irmp.ucl.ac.be/wiki/Korea08-ATL-PHYS-PROC-2016-117)

## EXPERIMENTAL PAPER

- Reading done
- Update of the wiki: documentation on cuts + object definitions

## VALIDATION

- Contact of ATLAS for the missing validation material. If no answer: we have plots after all selections.
- Digestion of all available material (getting what has to be done for the validation).

## SIMULATION

- Simulation information (inputs, cards) on the wiki.
- Simulation of the (standard model) ttZ and ttW signal on-going

**DELPHES:** Tuning of the card not started yet

**IMPLEMENTATION:** initiated

# NEW example in MA5:

From Benjamin this morning:

<https://inspirehep.net/record/1618045/>

which is the low luminosity version of CMS-EXO-16-052

It is already included in the PAD:

Install the new version of MA5 from this morning (not the longlived one), then install PAD

The delphes card for this analysis can then be found here:

PAD/Input/Cards/delphes\_card\_cms\_exo\_16\_010.tcl

And the code:

PAD/Build/SampleAnalyzer/User/Analyzer/cms\_exo\_16\_010.\*