ttH@LIP News

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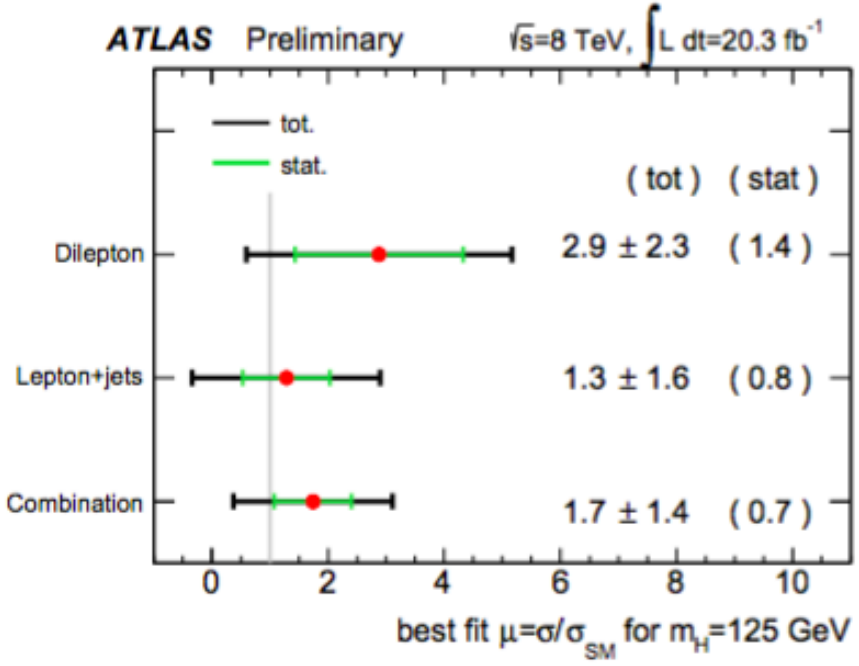
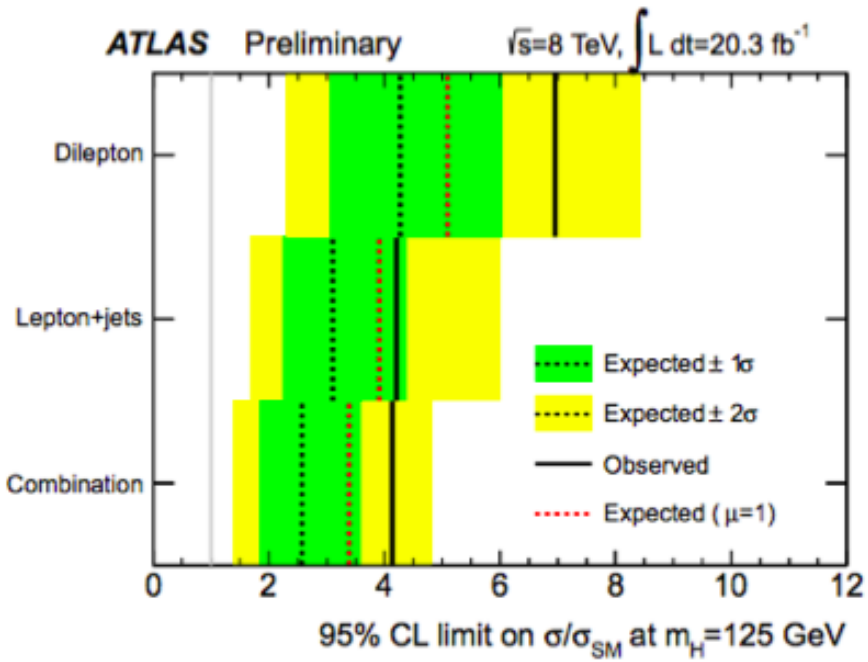
2 Abril 2014

ttH@LIP

Results

95% CL upper limit on σ/σ_{SM}	observed	-2 σ	-1 σ	median	+1 σ	+2 σ	median (μ = 1)
Single Lepton	4.2	1.7	2.2	3.1	4.4	6.0	3.9
Dilepton	7.0	2.3	3.1	4.3	6.1	8.4	5.1
Combination	4.1	1.4	1.9	2.6	3.6	5.0	3.4





ATLAS-COM-CONF-2014-004

Planos de HSG8 – plenário de hoje

- ICHEP (July 2nd), target May 15th for ATLAS paper circulation
  - May 15th implies:
    - a draft provided to the ed board by ~May 1st
    - Unblinding and unblinded approvals in April
    - Papers written in parallel (shorter papers should be considered)
    - Need to start our sprint at the end of the marathon… If we miss ICHEP, we will be working on Run 1 analyses this summer: let's make one last push and wrap it up now

Unlikely there will be a preliminary full-blown Higgs coupling combination for ICHEP, but having partial combinations (e.g. available ttH channels, or ttH(bb) and VH(bb)) may be a possibility.

This does not relax the goal of having all publication results ready this summer.

Publication Plans

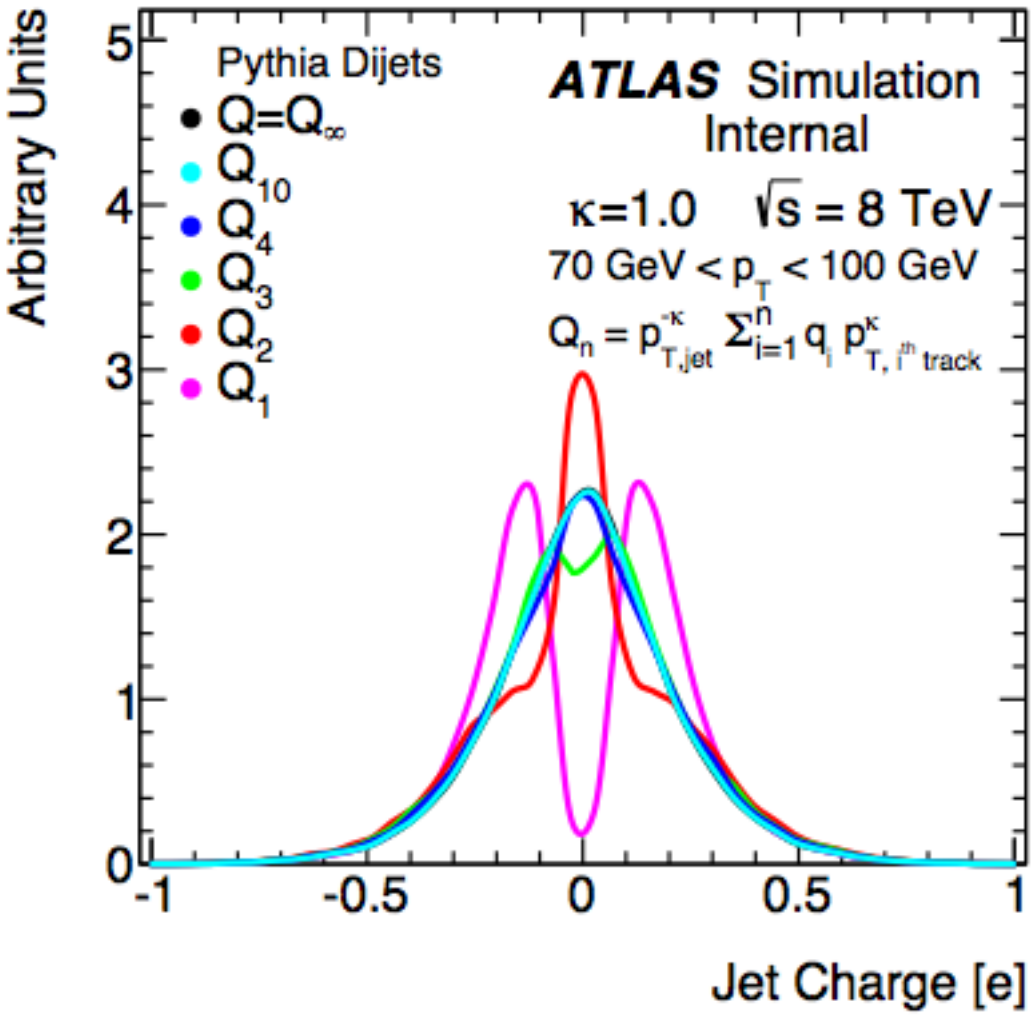
- ttH($\gamma\gamma$): 2012 data unblinded, waiting for finalization of 2011 calibration
- ttH(bb):
  - l+jets/dilepton: approved as preliminary, will add ME in MVA for pub
    Potentially: add l+τ channel (if ready in time)
  - all-hadronic: making good progress but need to speed up
- ttH(multileptons): many channels (2l SS, 3l, 4l, 2l SS+τ_{had}, l+2τ_{had})
  - Will push forward in the review leading channels (2l SS and 3l), which also seem to be more advanced. Rest of the channels will follow as they become available.
  - Possibility of having two instead of one publications will be discussed once light-flavor analyses are sufficiently advanced.
- $H^+ \rightarrow tb$: ➔ progress report today.

- **Publications planned for ICHEP:**
  - ttH(bb) l+jets/dilepton (may likely split bb publication in two)
  - ttH($\gamma\gamma$)
  - $H^+ \rightarrow \gamma\gamma$
  - ➔ Means unblinding approval late April, paper to ATLAS circulation May 15.
  - ➔ Need to start preparing for possible ttH(bb) and ttH($\gamma\gamma$) combination.
- **Rest of publication results:**
  - Aim at unblinding approval end of May.

Estudo da composição e carga de jactos

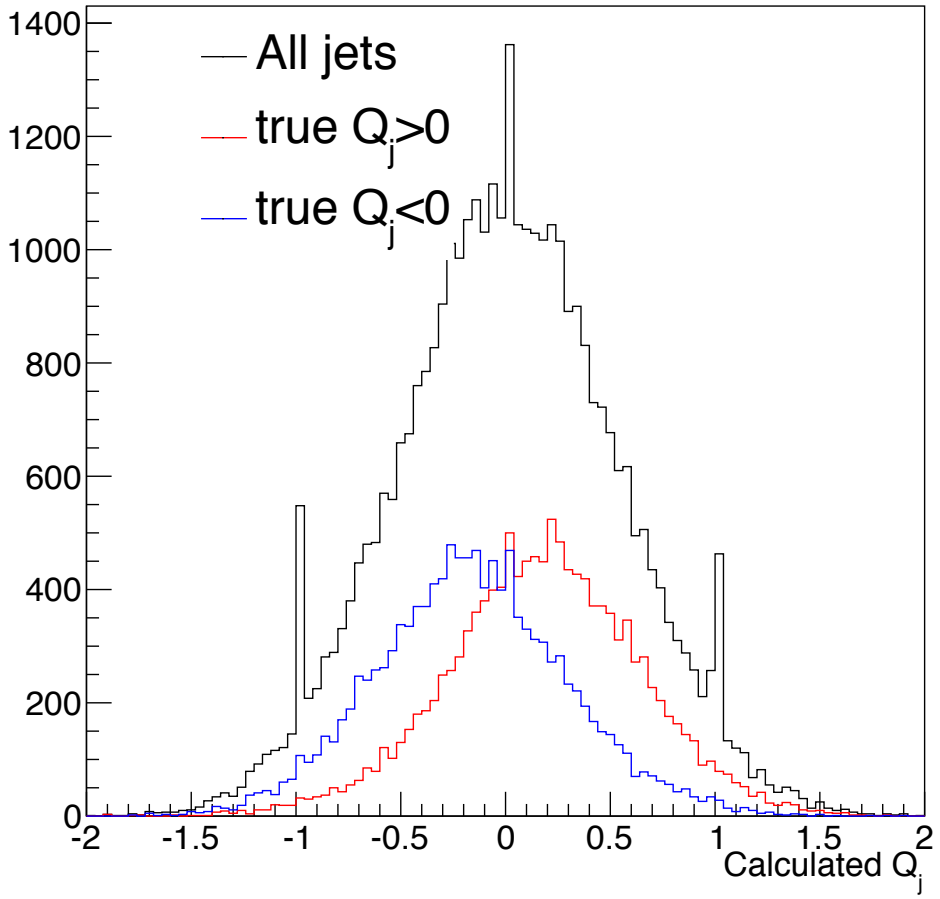
- A carga do partão que inicia um jactc é difícil de determinar
- Um algoritmo:

$Q_j = 1/p_{T,j}^{k} \Sigma_i^{trks} q_i \, p_{T,i}^{k}$



Resultados preliminares

- Referência (Q_j^{true}):
  - carga do partão de mais alto p_T
  - ΔR(partão, jacto)<0.3
- Algoritmo:
  - $Q_j = 1/p_{T,j}^{k} \Sigma_i^{trks} q_i \, p_{T,i}^{k}$
  - Parâmetro k=0.5
- Cortes nos jactos:
  - $p_T^{constit} > 0.5$GeV
  - $|\eta_{constit}| < 2.5$
  - $p_T^{jet} > 10$GeV



Rob Cantrill

- Novo postdoc vai começar no LIP no fim de Abril
- Vem do Royal Holloway e trabalhou na análise de H➔γγ em ATLAS, no canal de Vector Boson Fusion

Outros assuntos…

- Reunião em Coimbra na próxima semana?
- Reunião de ATLAS@LIP no próximo mês
  - Data ainda não definida, mas vão ser regulares
  - Era bom prepararmos algumas apresentações curtas:
    - Data-driven Z+jets corrections
    - Trabalho no código
    - Trabalho da carga de jactos
- Lembrar:
  - Facturas das Jornadas do LIP em Lisboa