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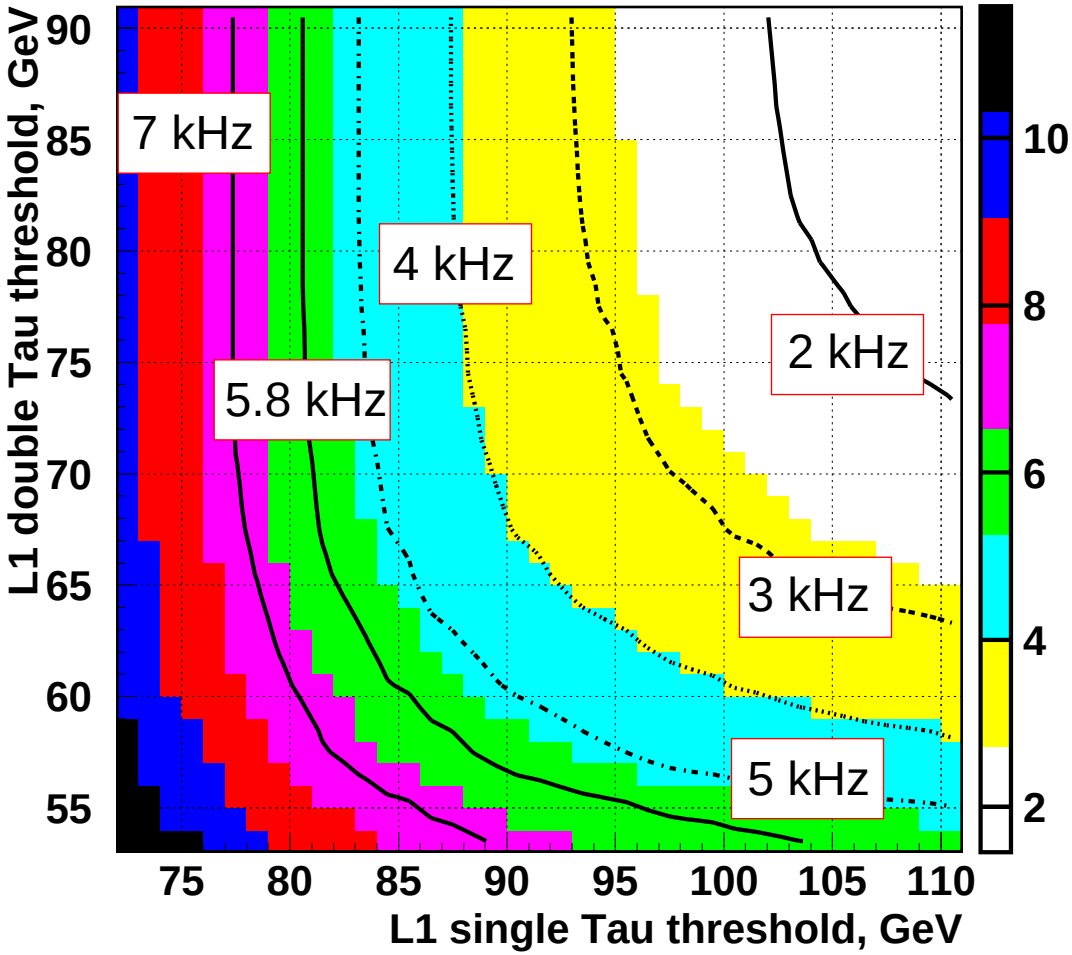
news on H->2τ ->2-jet

- L1 thresholds optimizations
- search for second tau at L2

L1 iso-rate curves for 1Tau or 2Tau

A. Nikitenko

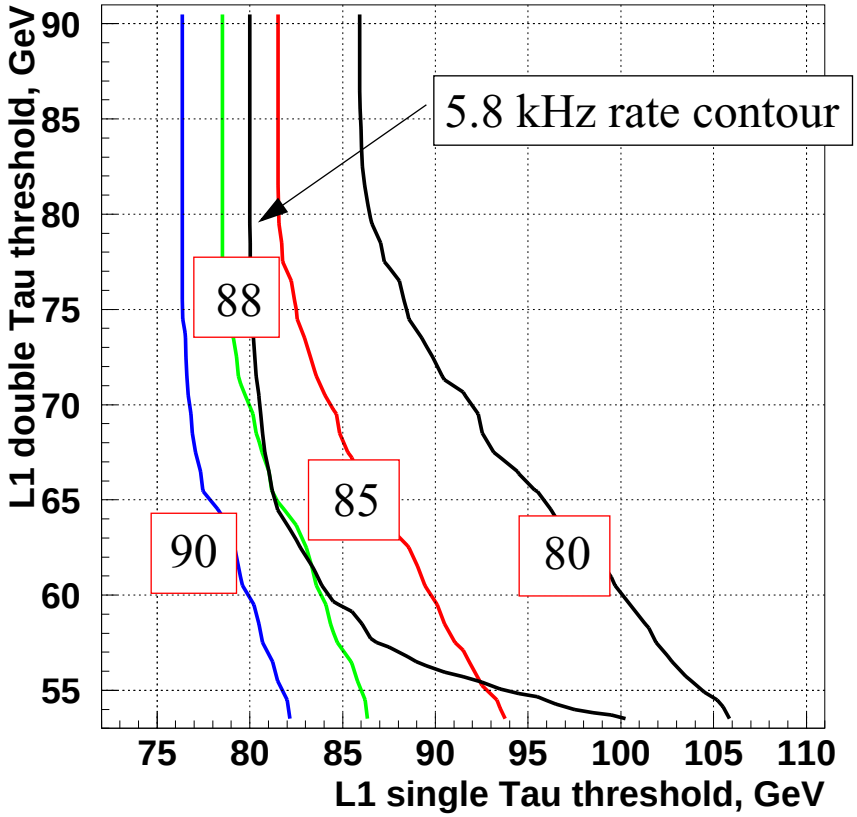


optimal thresholds for the same rate

efficiency of tau signals at 5.8 kHz L1 rate of 1T or 2T trg.

L1 threshold, GeV		efficiency	
1Tau	2 Tau	H->2τ-jets M=200 GeV	H^+->τ-jet M=200 GeV
100	54	0.82	0.82
94	55	0.84	0.84
88	57	0.86	0.85
84	60	0.88	0.86
82	64	0.88	0.87
81	65	0.88	0.87
80	80	0.86	0.87

efficiency (%) for H->2τ-jet M_H = 200 GeV

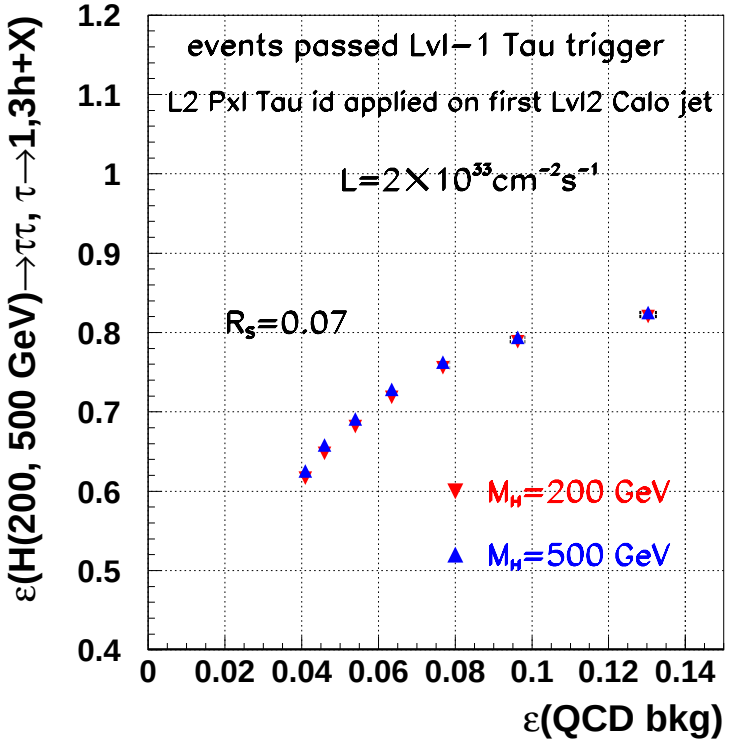


A. Nikitenko, R. Kinnunen

Reminder :problem with second τ jet at HLT

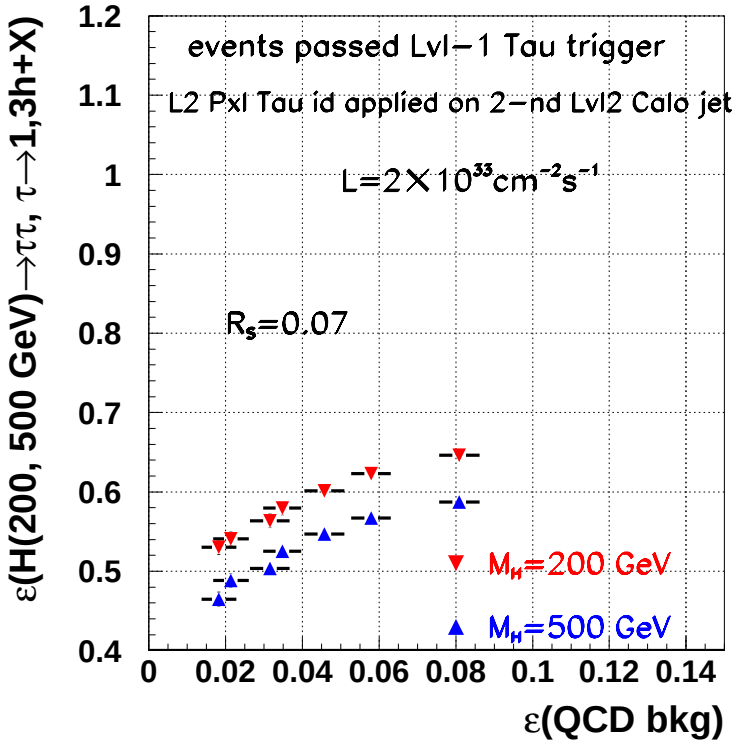
Pxl id on 1-st Calo Jet

isolation cone varied 0.2-0.5



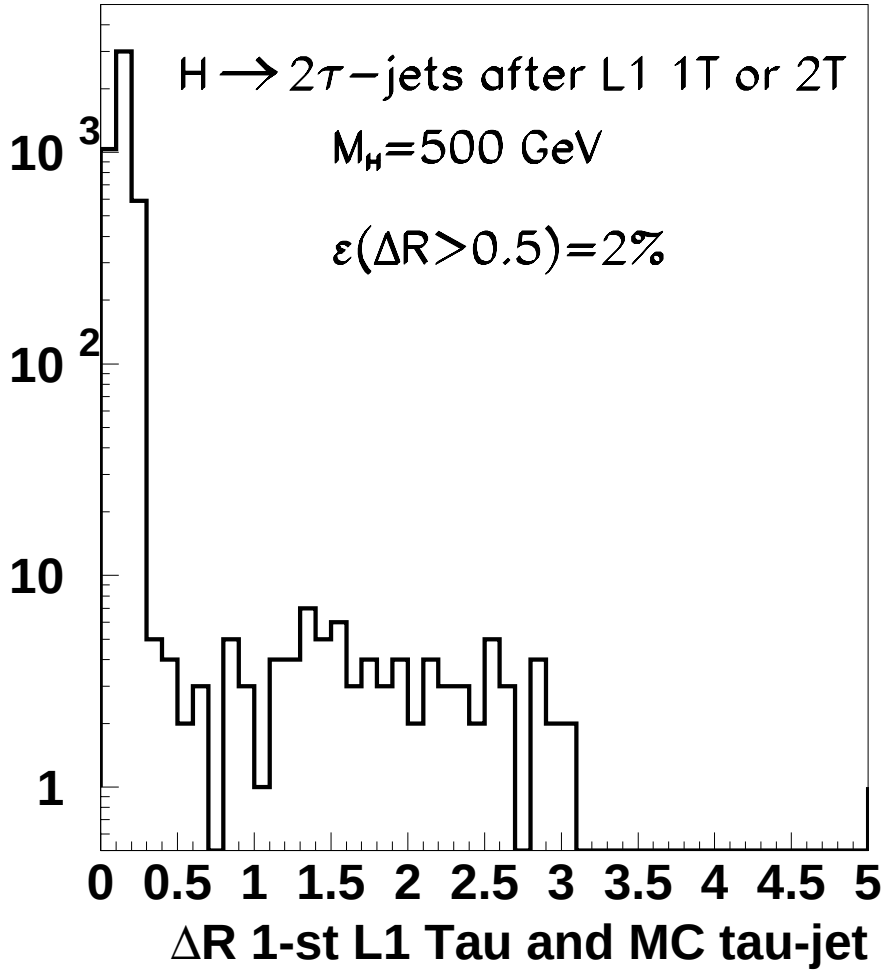
Pxl id on 2-nd Calo Jet

isolation cone varied 0.2-0.5

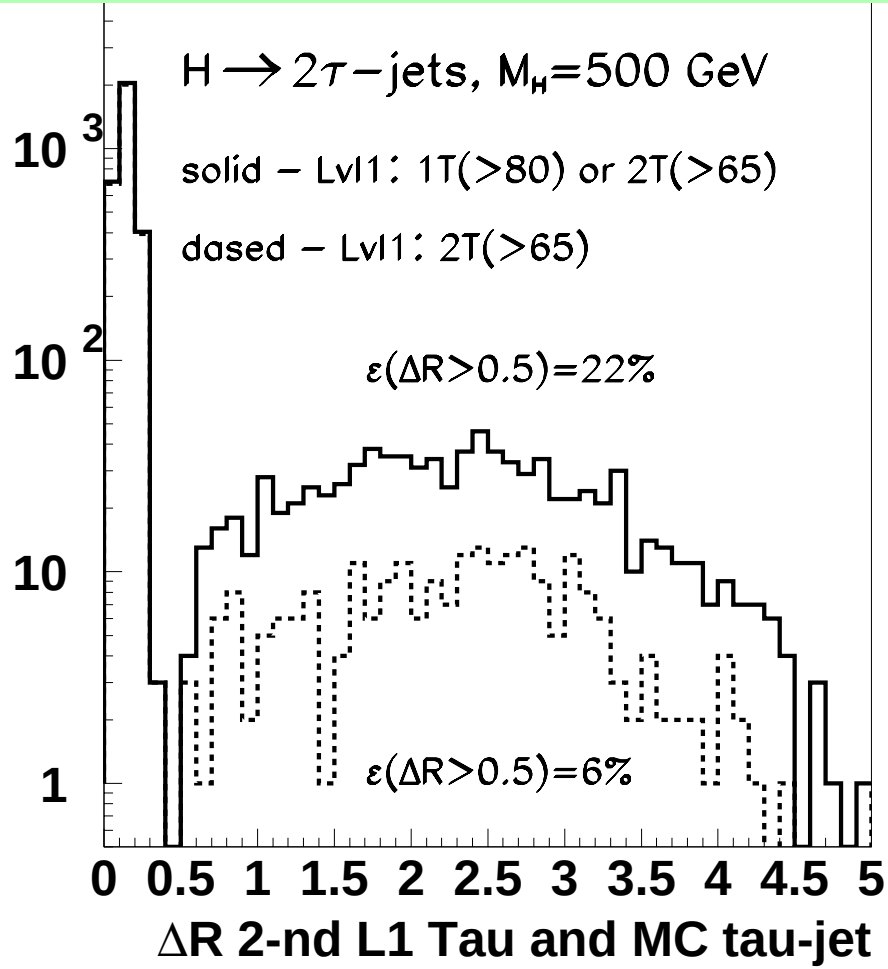


why Pxl id on second τ is less efficient ?

Matching of 1-st L1 Tau and MC Tau - jet

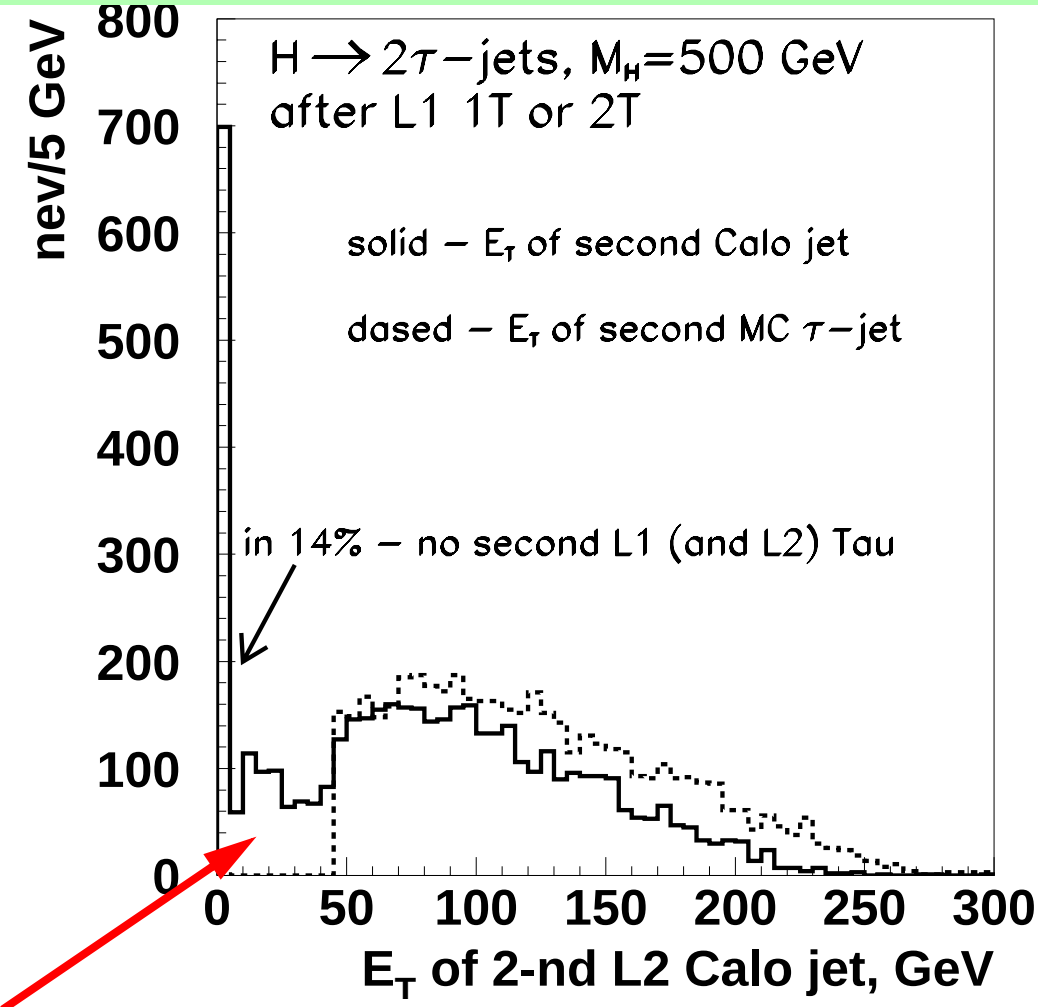


Matching of 2-nd L1 Tau and MC Tau - jet



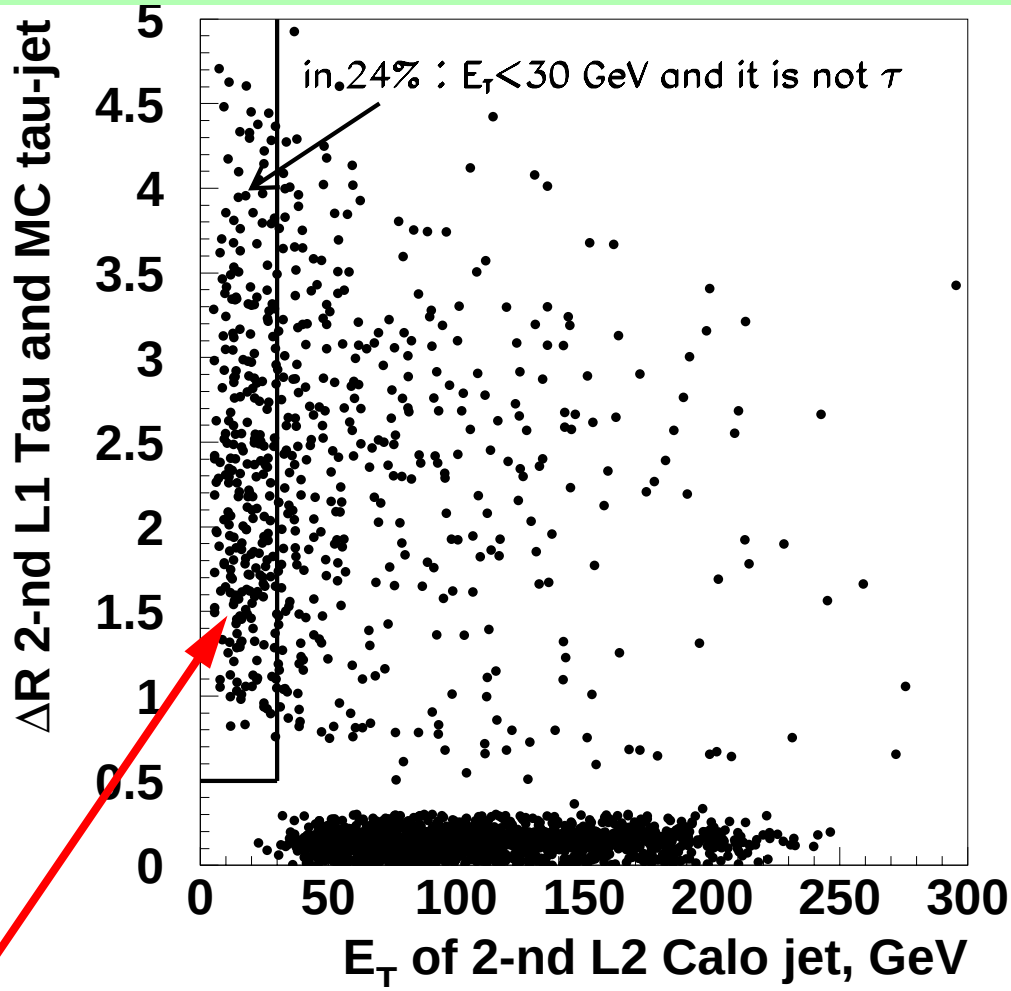
In 22% events 2-nd L1 Tau catches something else but not a real tau.
It is soft Jet, since events with bad matching doesn't pass 2T trigger

E_T of second L2 Calo Jet



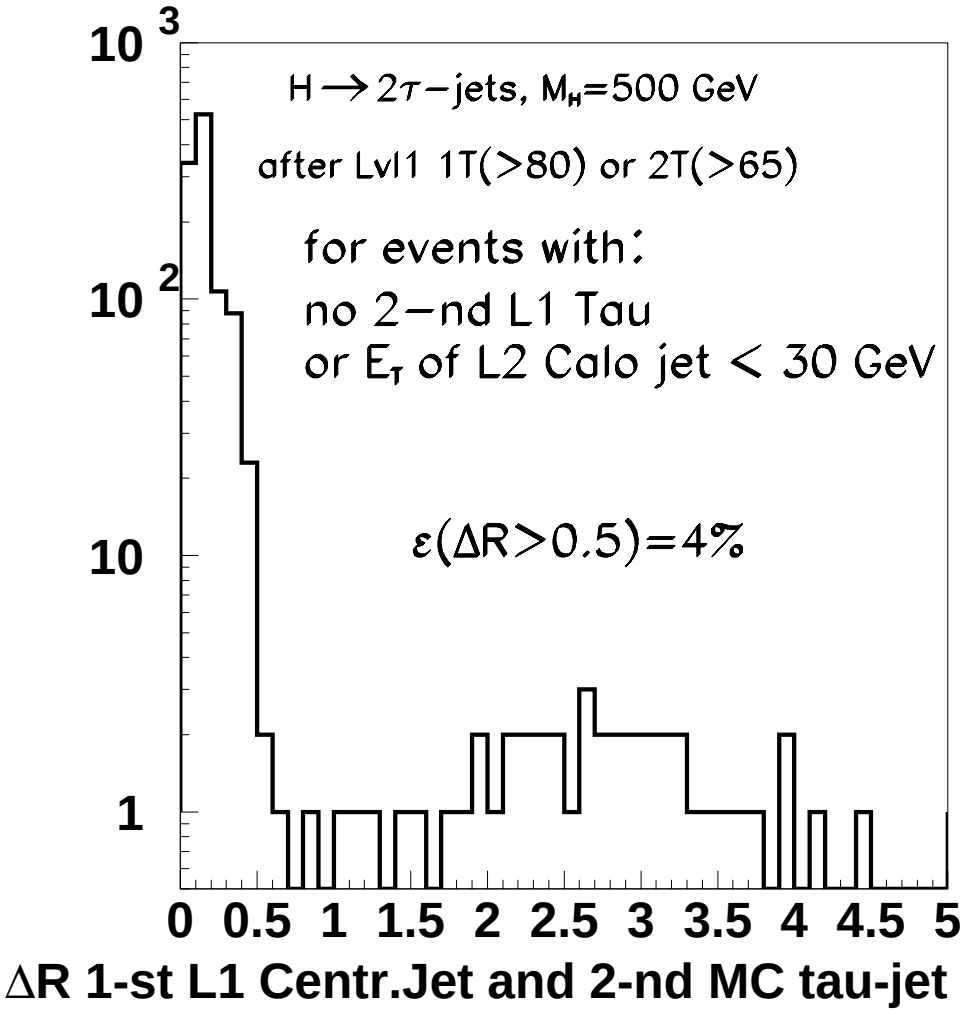
these jets are not tau's.

bad matching for 2-nd L2 Calo Jet of E_T < 30-40 GeV



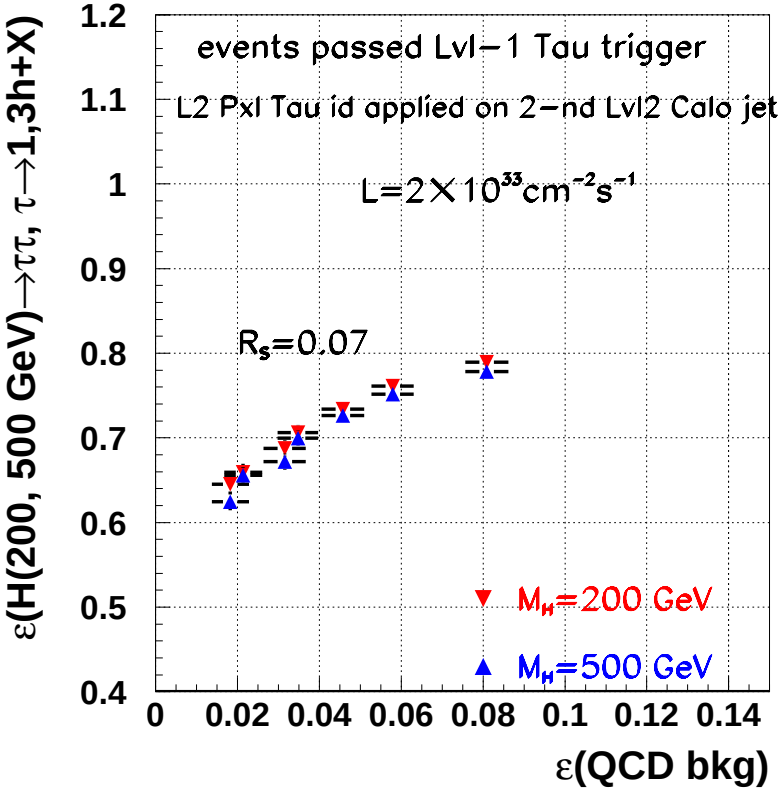
May be for these events real second tau is in the L1 list of Central Jets ?

yes, it's here ! it's first L1 Central Jet



. . . so, if there is no 2-nd L2 Tau jet or it exists but E_T < 30-35 GeV (at L2) analyse with Pxl/Trk the 1-st Jet from Central Jet list

Pxl ID for 2-nd L2 Calo Jet with E_T > 35 GeV



Pxl ID for L2 Central Jet when E_T < 35 GeV

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hope to get it by CMS week