

Muon Treatment at All Trigger Levels

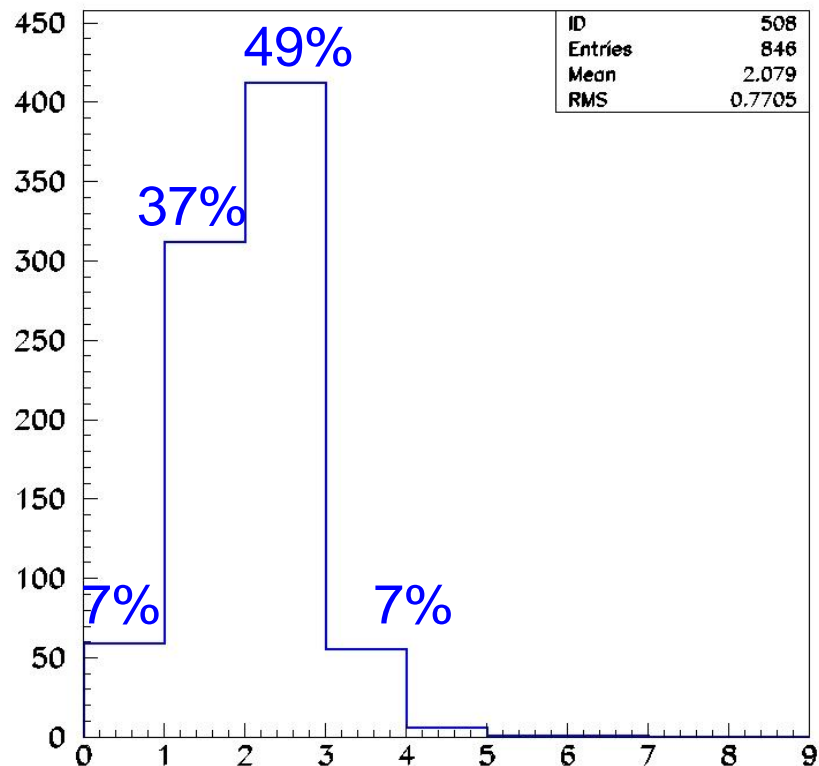
Sandra Amato and Leandro de Paula
LAPE - IF - UFRJ

April 15th 2004

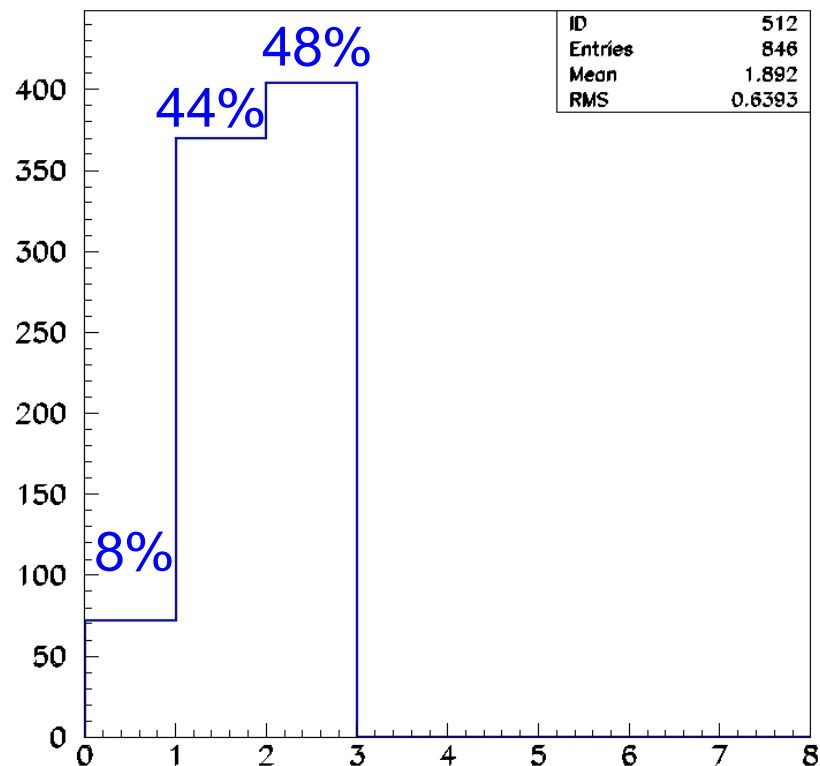
- ✗ μ in L0 \rightarrow efficiency \sim 90% (CPPM)
- ✗ μ offline \rightarrow efficiency \sim 95% (LAPE)
- ✗ μ in HLT \rightarrow as good as offline, but slow (LAPE and O. Callot)
- ✗ μ in L1 \rightarrow uses L0 candidates

$J/\Psi K_S$ Selection and L0- μ Candidates

Number of candidates after ghost killing

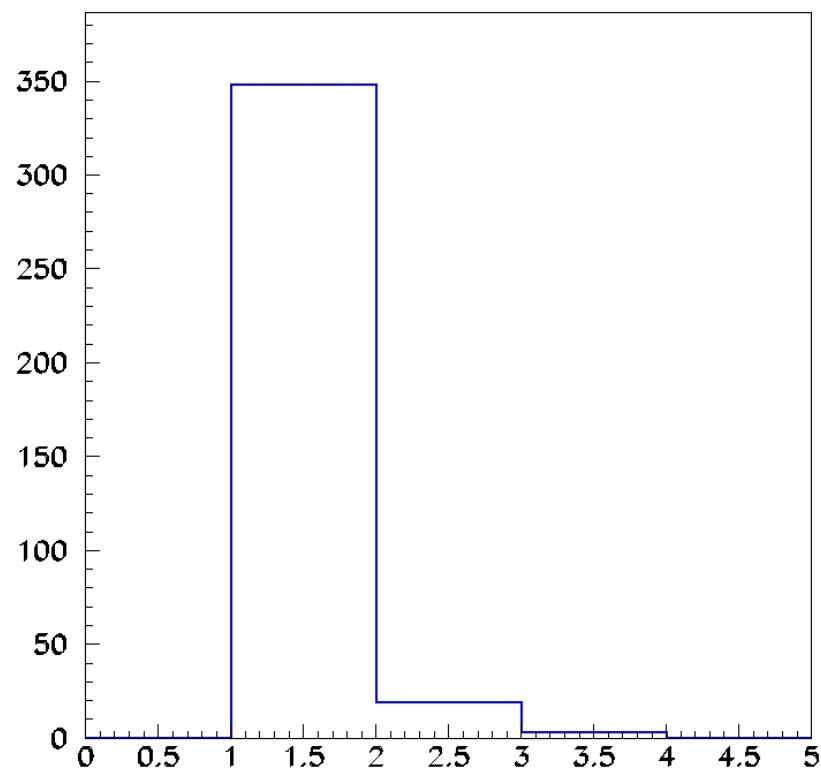


μ Candidates

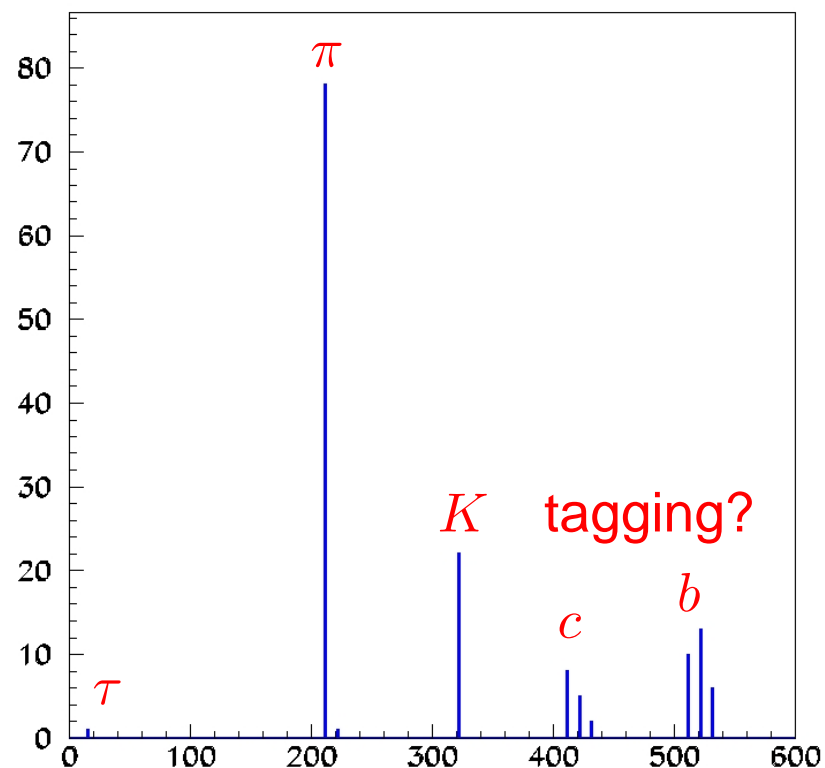


μ Candidates from J/ψ

$J/\Psi K_S$ Selection and L0- μ Candidates



Events in the quadrant
(one μ from a J/ψ identified)

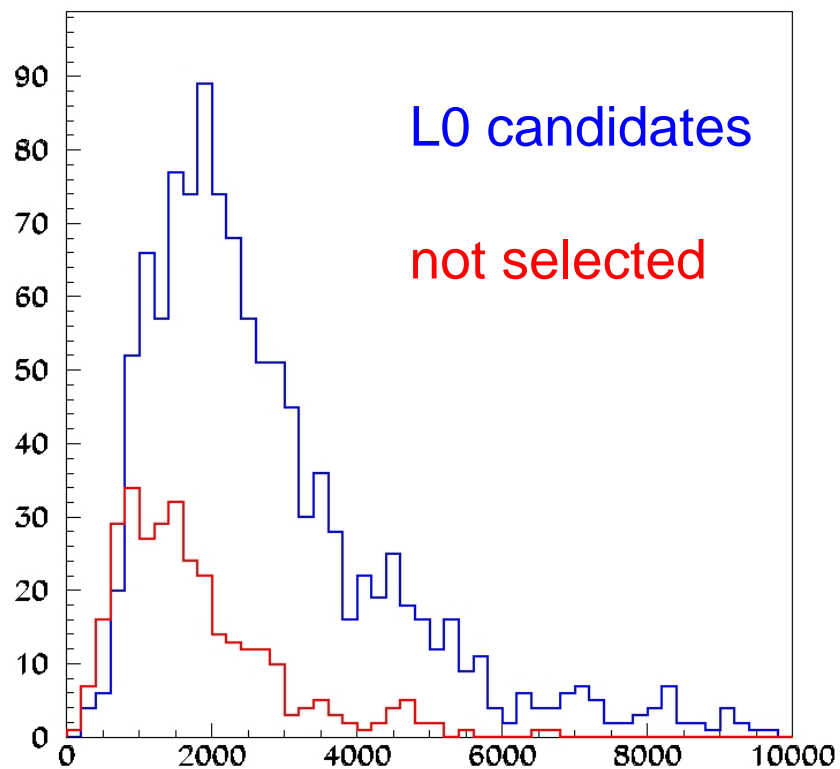


Origin of the candidate
not coming from a J/ψ

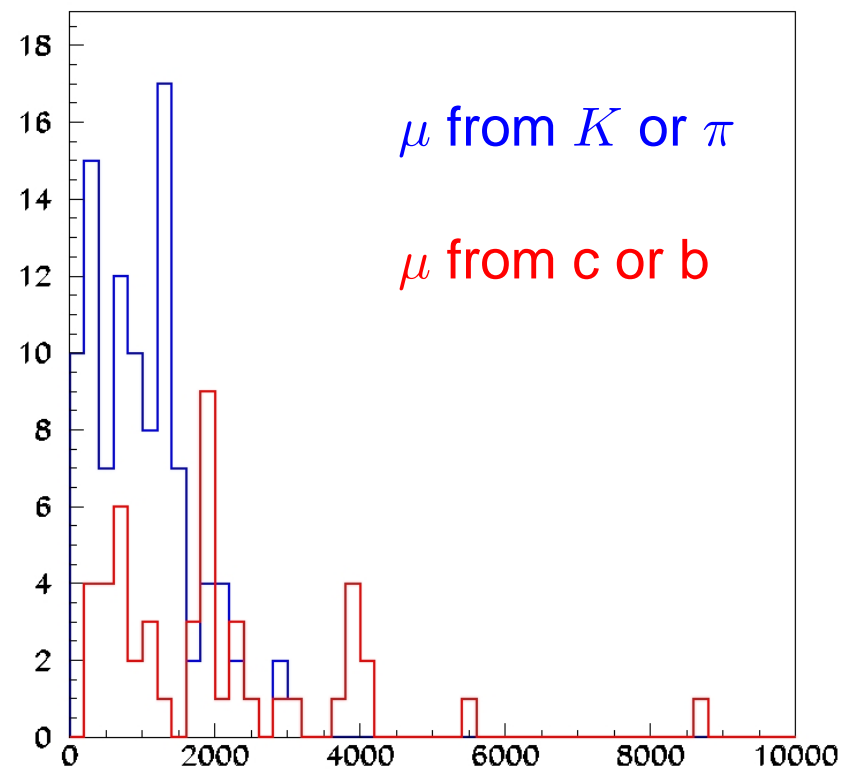
$J/\Psi K_S$ Selection and L0- μ Candidates

- ✗ 846 selected candidates in a $B_d^0 \rightarrow J/\psi(\mu^+\mu^-) K_S^0(\pi^+\pi^-)$ sample
- ✗ DaVinci v9r0 - long tracks
- ✗ Only one L0 candidate, out of 1336, is not associated to a μ
- ✗ 93% of the selected events have L0- μ candidates
- ✗ 71% of the μ coming from a J/ψ are L0- μ candidates
- ✗ 1.4% (12) events have L0- μ candidates but none of them associated to a J/ψ daughter
- ✗ 52% of the events have at least one of the μ from a J/ψ not identified as an L0- μ candidate

True p_T from L0- μ candidates



J/ψ daughters



other μ

Plans

- ✘ Why 29% of the μ from J/ψ are not identified by L0?
 - more than 2 candidates?
Re-run L0 algorithm without the limitation of 2 candidates per quadrant
 - p_T ?
Re-run L0 algorithm with lower p_T cut
- ✘ Make a real study of this and other channels (rare decays)
- ✘ Can an L0 like algorithm at L1 level increase performance? (without M1)
- ✘ Can a μ ID like algorithm help?
- ✘ Thanks to the help of Luisanna, Mariusz, Jose Angel, Andrei and Olivier L.