



Identified Particle Studies

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- Final results (in review) for **900 GeV** 300k event sample (2009[†].)
- Minbias sample defined by a hit in any of central (SPD) or forward (V0) detectors and corrected to obtain inelastic event sample.
- Lévy fits, dN/dy and $\langle p_T \rangle$ extracted. Systematics with \sqrt{s} .

- Ratios as function of p_T , eg, K/π , ρ/π and Λ/K^0_S .

7 TeV data

- Currently analysing up to ~50 M minbias events with particles already mentioned.
- Additional species become accessible; Ω , $K^*(892)$, $\Sigma(1385)$, $\Xi(1530)$.
- Increase in p_T range, in particular for weak decays up to 7-10 GeV, and much improved precision in yield for rare particles (Ξ , Φ).

Species	Λ	K^0_S	Ξ	ϕ	π	K	p
p_T range (GeV)	0.6	0.2	0.6	0.7	0.1	0.2	0.35
	3.5	3.0	3.0	3.0	2.6	2.4	2.4
$ y $ range	0.8	0.75	0.8	0.6	0.5	0.5	0.5

[†] We concentrated on this sample due to temporary loss of 2010 900 GeV sample of 8M events



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Further 7 TeV topics

- Neutral mesons with calorimeters and conversions: 0.5-30 GeV for π^0 and 2-20 GeV for η (upper p_T limit using full mb statistics.)
- Multiplicity dependence under study. Currently using bins based on measured charged tracks within $|\eta| < 0.8$, $p_T > 0.15$ GeV.
- Relativistic rise dE/dx in p_T range 5-15(?) GeV should be possible.

Underlying event

- To date there are no analyses of the underlying event using identified particles.
- Some studies discriminating on event shape (just) underway.
- Having defined goals and points of comparison to theory will likely stimulate interest in this area.

