Low-p_T UPC D^0 analysis using '23 UPC reconstruction data

Janice Chen, Chris McGinn, Hannah Bossi, Jordan Lang, Tzu-An Sheng (MIT), Jing Wang (CERN), Balazs Kovacs (Budapest), Cristian Baldenegro, Yen-Jie Lee, Gian Michele Innocenti (MIT)

Group Meeting

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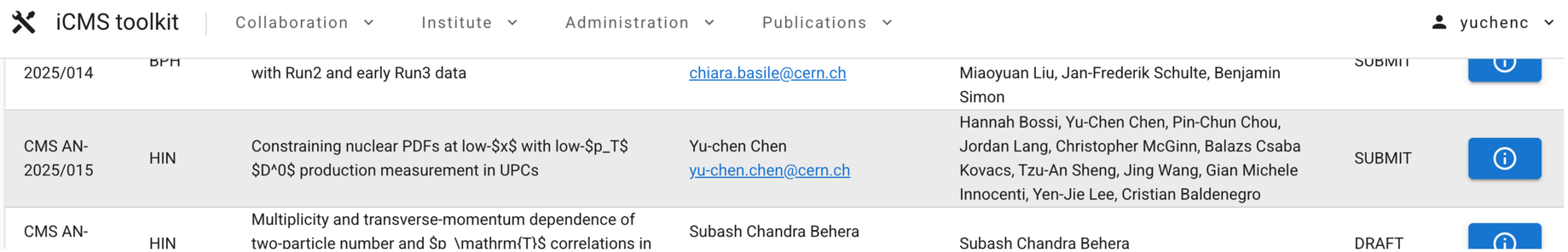
- **Preliminary results in analysis note:**
  - Documented the preliminary low-pT y-dependent D production measurement ($2 \leq D_{pT} \leq 5$ GeV) in the analysis note [link]



  - We would like to request opening a CADI and to proceed with the review / approval process
  - Received AN comments from the forward convener

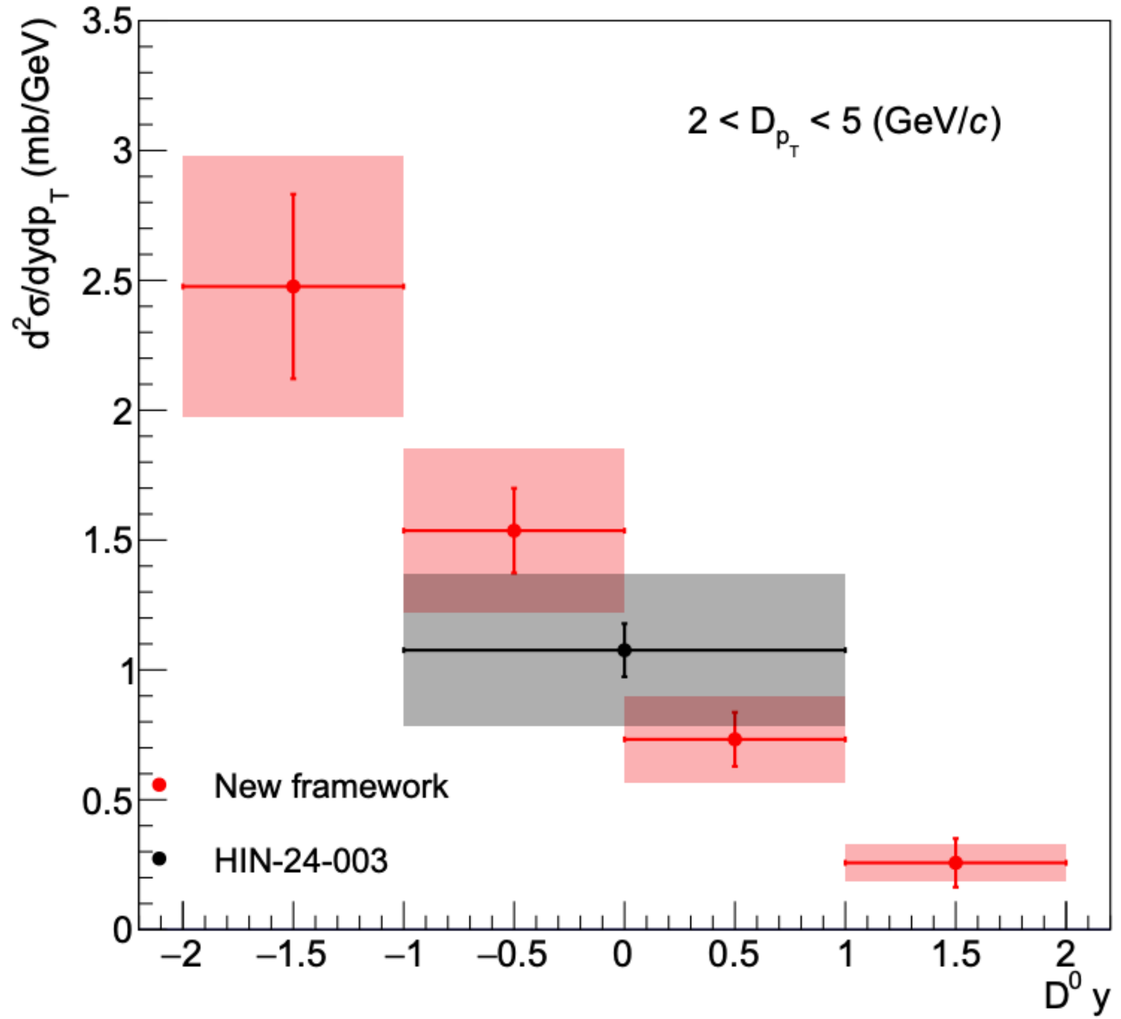
- **Remaining tasks:**
  - Follow-up studies on the preliminary systematic assessment

    Some systematics uncertainties are large. It is due to deficiency of MC statistics after investigations
  - Current MC statistics is small. We've requested larger MC statistics, and aim to update the results with larger MC samples
  - Study data / MC differences, and derive the MC reweighting to improve the data & MC alignment

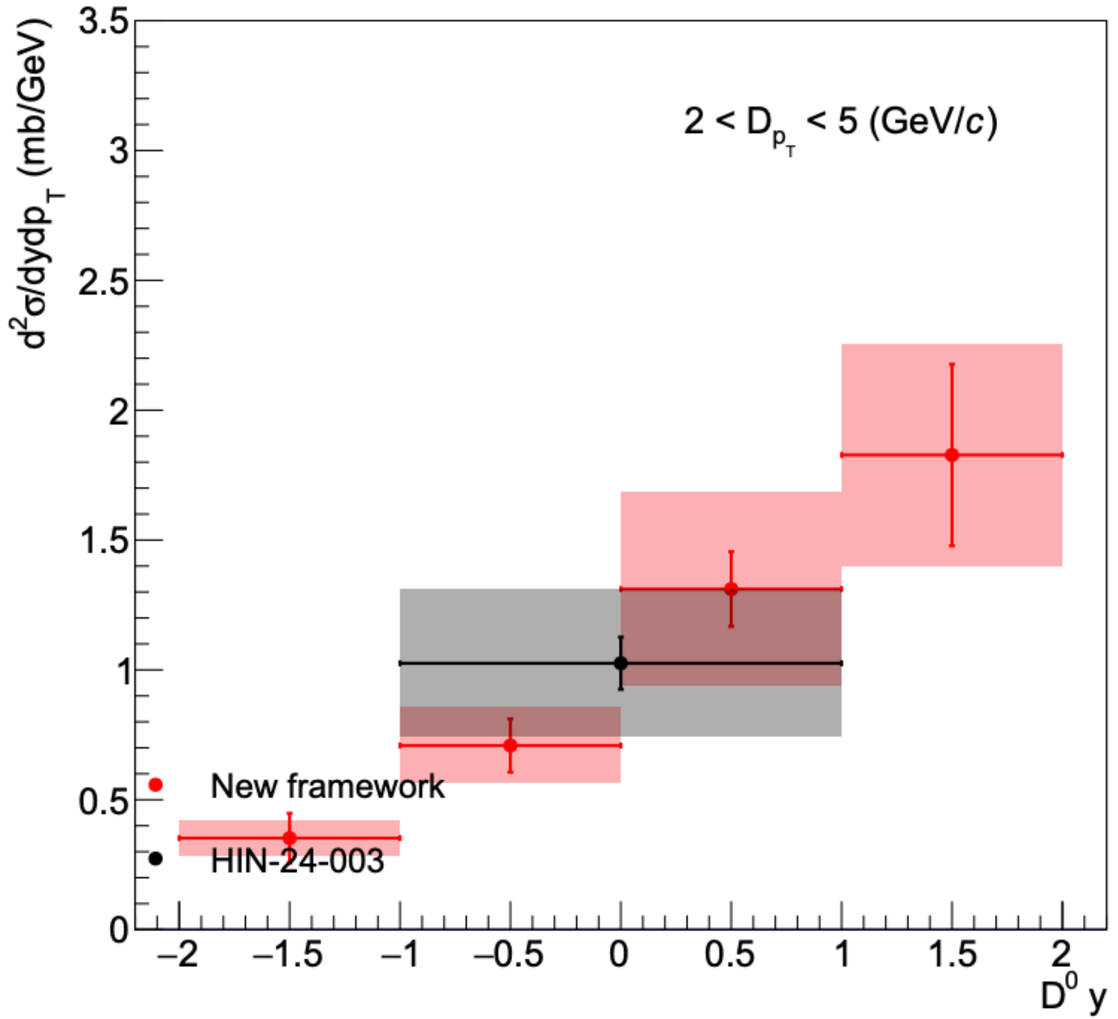
Backup

$d^2\sigma/dydp_T$ in $2 \leq D_{pT} \leq 5$ GeV

γN



Nγ



* Details in analysis note

Systematic breakdown

γN

Source	p_T interval (GeV)			
	2-5			
	y interval			
	-2 - -1	-1 - 0	0 - 1	1 - 2
EvtSel	0.45	0.26	0.33	0.56
HFEMinForGap	7.45	5.47	14.12	17.19
Trk	4.60	4.60	4.60	4.60
BR	0.76	0.76	0.76	0.76
Prompt	5.00	5.00	5.00	5.00
D0SelDsvpv	10.35	4.33	5.31	12.06
D0SelDtrkPt	2.42	4.75	5.91	6.03
D0YieldFixMean	0.35	0.16	0.15	0.16
D0YieldPoly	0.27	10.21	0.20	2.45
D0YieldKKpipi	13.00	13.00	13.00	13.00
Lumi	5.00	5.00	5.00	5.00
Total	20.24	20.41	22.43	26.91

Nγ

Source	p_T interval (GeV)			
	2-5			
	y interval			
	-2 - -1	-1 - 0	0 - 1	1 - 2
EvtSel	0.36	0.23	0.19	0.28
HFEMinForGap	10.22	6.32	5.59	10.77
Trk	4.60	4.60	4.60	4.60
BR	0.76	0.76	0.76	0.76
Prompt	5.00	5.00	5.00	5.00
D0SelDsvpv	1.79	7.01	3.88	9.65
D0SelDtrkPt	3.58	9.03	19.30	6.54
D0YieldFixMean	0.31	0.06	0.14	0.02
D0YieldPoly	3.52	2.31	11.96	7.36
D0YieldKKpipi	13.00	13.00	13.00	13.00
Lumi	5.00	5.00	5.00	5.00
Total	19.33	20.42	28.33	23.38

* Details in analysis note