

ILD Top / Heavy Flavour working meeting

A. Irlles

3rd February 2023

IFIC
INSTITUT DE FÍSICA
CORPUSCULAR



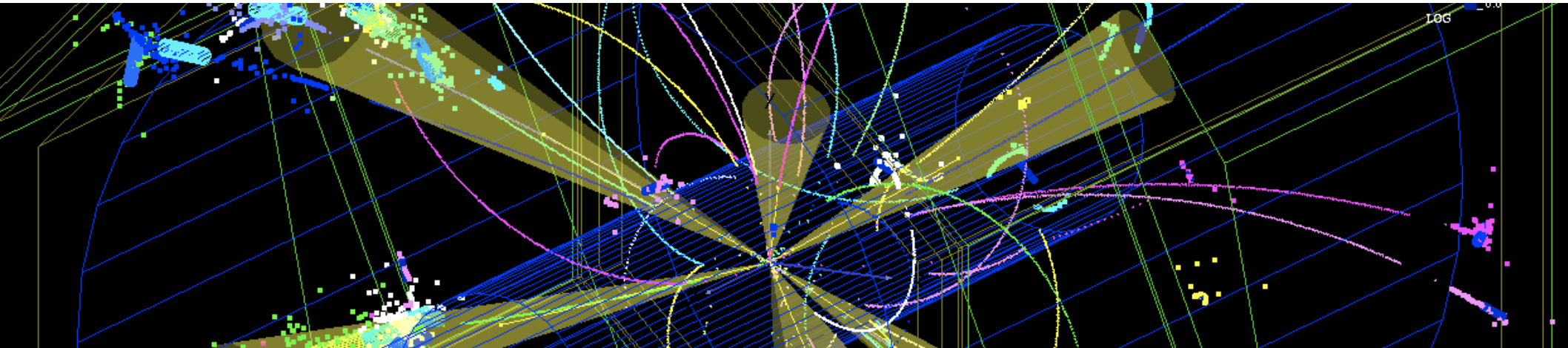
VNIVERSITAT
ID VALÈNCIA



CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

AITANA

MATTER AND TECHNOLOGY



11:00 AM → 11:15 AM **Intro** ¶

Speakers: Adrian Irlles (IFIC (CSIC/UV) Valencia) , Roman Poeschl (Université Paris-Saclay (FR))

11:15 AM → 11:35 AM **ssbar AFB studies at 250GeV**

Speaker: Yuichi Okugawa (Université Paris-Saclay (FR))

11:35 AM → 11:55 AM **AFB studies at 500GeV**

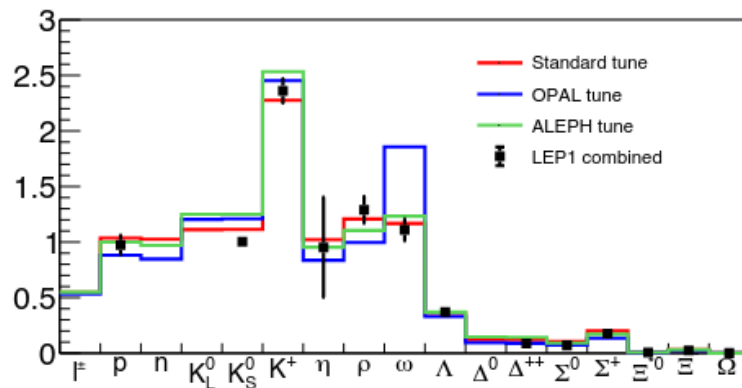
Speaker: Jesús P. Márquez Hernández (IFIC (CSIC/UV))

Fragmentation tunes

- ▶ Recent works on the implementation of Pythia8 in the ILD simulation framework
 - Zhijie Zhao, DESY
 - <https://agenda.linearcollider.org/event/9939/contributions/51912/attachments/38663/60847/ILD20230201.pdf>
- ▶ Basic comparisons OPAL, ALEPH tunes are done

Average Hadron Multiplicities

We also compare other hadrons



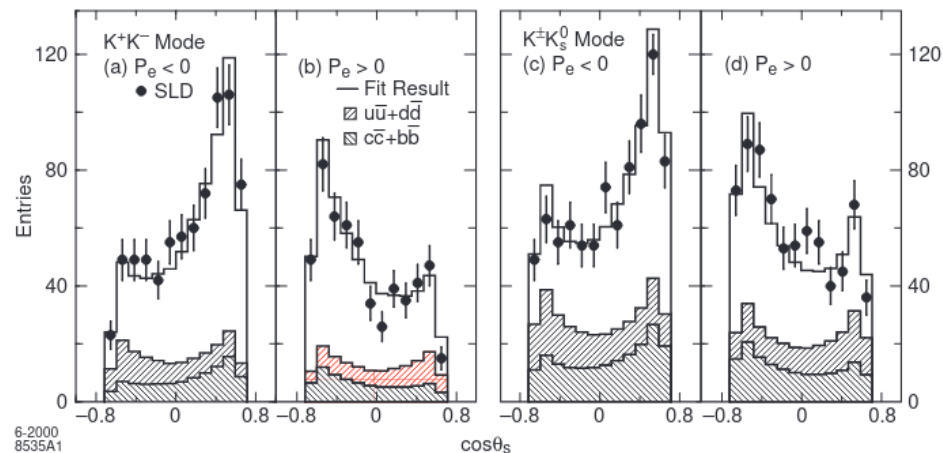
> The standard tune is closest to data.
DESY | Tuning Pythia8 for future e^+e^- colliders | Zhijie Zhao | DESY, February 1, 2023

Fragmentation tunes

- ▶ Fragmentation models/tunes are important for our studies. Specially for Yuichi's
- ▶ What other observables / figures of merit should be used to crosscheck the tunes? Can/shall we propose specific tests?
- ▶ A reference from SLD:
 - FIRST DIRECT MEASUREMENT OF THE PARITY-VIOLATING COUPLING OF THE Z0 TO THE s-QUARK
 - <https://arxiv.org/pdf/hep-ex/0006019.pdf>

Mode	# Events in Data	MC Prediction	$s\bar{s}$ Purity	Analyzing Power
K^+K^-	1290	1312	0.73	0.95
$K^\pm K_s^0$	1580	1617	0.60	0.70
$K^+\Lambda^0, K^-\Lambda^0$	219	213	0.66	0.89
$\Lambda^0\bar{\Lambda}^0$	17	14	0.57	0.70
$\Lambda^0 K_s^0, \bar{\Lambda}^0 K_s^0$	193	194	0.50	0.32

Table 1: Summary of the selected event sample for the two tagging modes and the three cross-check modes.



A silver signpost with two directional signs. The top sign is a white arrow pointing left with the text 'TOUTES DIRECTIONS'. The bottom sign is a white arrow pointing right with the text 'AUTRES DIRECTIONS'. The background is a blue sky with white clouds.

TOUTES DIRECTIONS

AUTRES DIRECTIONS