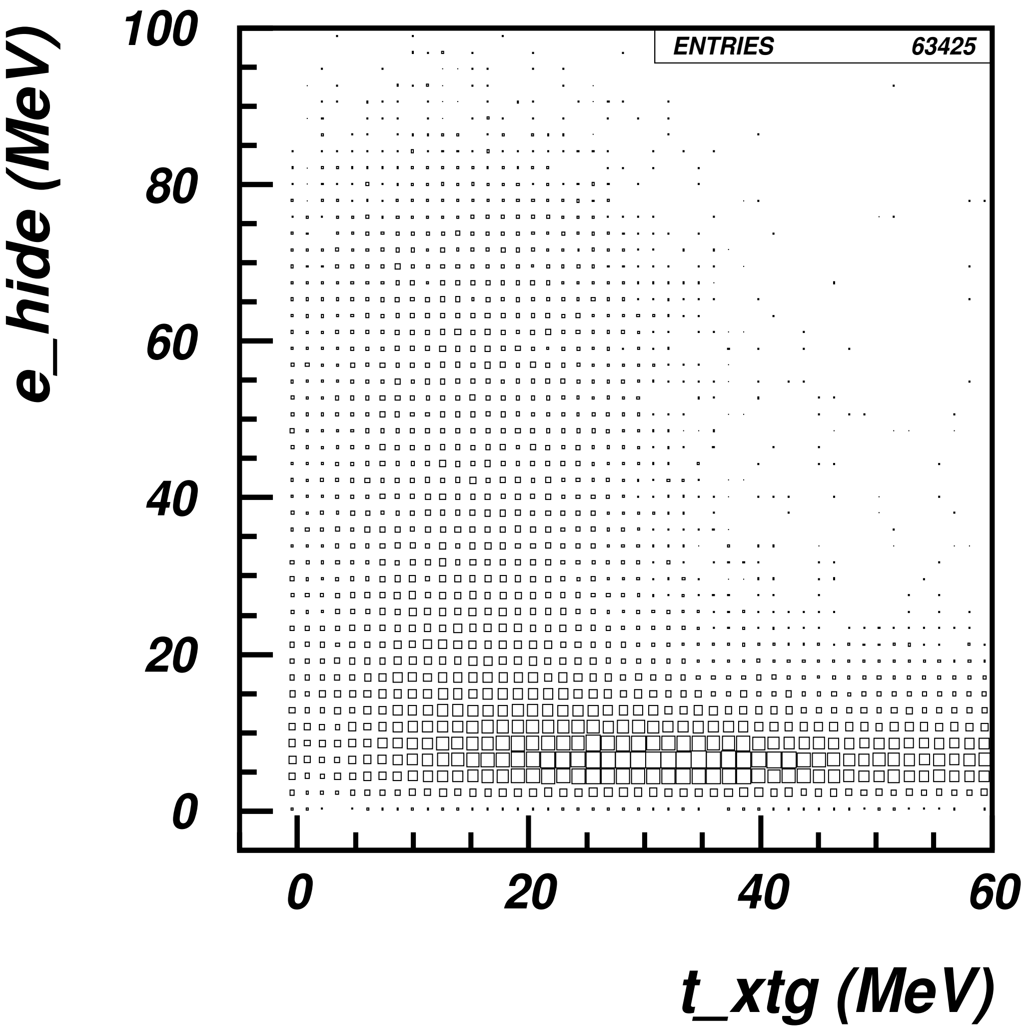
Ke4 background study (23 Jun, 2006)

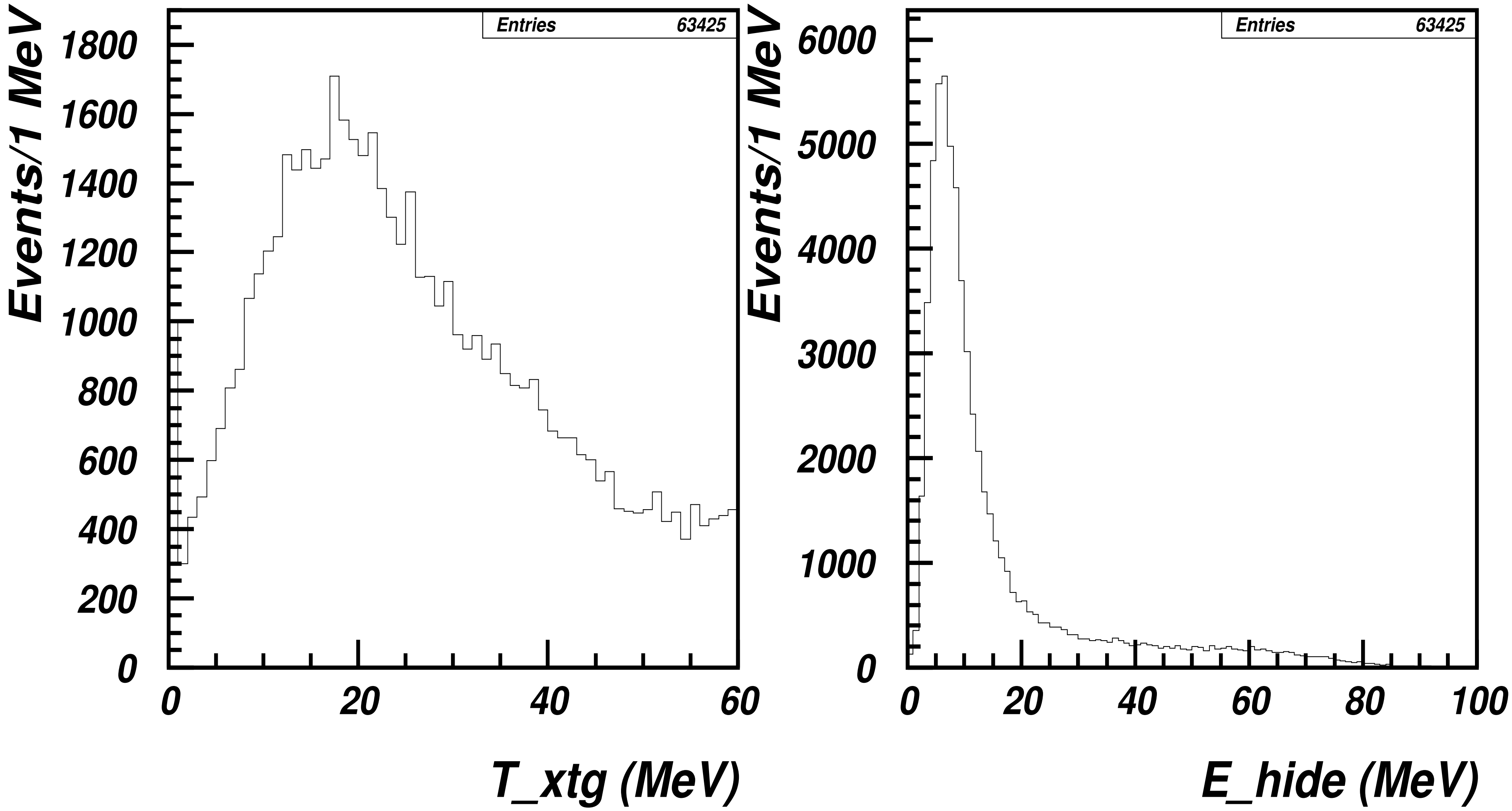
- Using umc data to study the rejections of TGPV and CCDPUL
- TGPV (OPSVETO): T_{xtg}, in-time energy in fibers classified as neither K fiber nor π fiber.
- CCDPUL: E_{hide}, total energy in K fibers at π time (umc truth).

E_{hide} **vs.** T_{xtg}



Comparable with Fig. 29 (tn386)

Projections on T_{xtg} and E_{hide}



Comparable with Fig. 29 (tn386)

Rejection of cuts on T_{xtg}

Rejection of cuts on T_{xtg} for different E_{hide} cuts

	$T_{xtg} < 0.6$	$T_{xtg} < 1.2$	$T_{xtg} < 1.8$
$E_{hide} < 1.5$	245/12 (20)	245/18	245/18 (14)
$E_{hide} < 2.5$	1104/27 (40)	1104/34	1104/36 (31)
$E_{hide} < 4.0$	5609/61 (91)	5609/70	5609/78 (80)
$E_{hide} < 10.0$	34943/264 (132)	34943/313	34943/354 (99)

Rejection in Bipul's thesis is 58 ± 41 and stable in range of $4.0 > E_{hide} > 1.5$

History of pass2 cuts on Ke4_MC1

Cut	events (acc)
Kstops	43999156. (1.00000)
TRIGGER	1335183. (0.03035)
BOX	492633. (0.36896)
PCUTS	492633. (1.00000)
TDCUTS	492633. (1.00000)
KCUTS	360652. (0.73209)
PRESEL	161137. (0.44679)
RCUT	161137. (1.00000)
PVICVC	55282. (0.34307)
EPITG	53085. (0.96026)
EPIMAX	51512. (0.97037)
TGER	51414. (0.99810)
TARGF	51079. (0.99348)
DTGTTP	51047. (0.99937)
RTDIF	50078. (0.98102)
DRP	42396. (0.84660)
EIC	37094. (0.87494)
TIC	0. (0.00000)

TGDEDX	23990. (0.64674)
TGENR	19079. (0.79529)
PIGAP	18516. (0.97049)
TGLIKE	17553. (0.94799)
TGB4	0. (0.00000)
PHIVTX1	8088. (0.46078)
PHIVTX2	7657. (0.94671)
CHI567	2193. (0.28640)
NPITG	2193. (1.00000)
VERRNG	1383. (0.63064)
CHI5MAX	1377. (0.99566)
ANGLI	1366. (0.99201)
KIC	1366. (1.00000)
EPIONK	1365. (0.99927)
TGKTIM	0. (0.00000)
TGEDGE	0. (0.00000)
TIMKF	0. (0.00000)
B4EKZ	0. (0.00000)
ALLKFIT	0. (0.00000)

History of pass2 cuts on Kp2_Kp2

Cut	events (acc)
Kstops	99993. (1.00000)
TRIGGER	36986. (0.36989)
BOX	36986. (1.00000)
PCUTS	36986. (1.00000)
TDCUTS	36986. (1.00000)
KCUTS	21278. (0.57530)
PRESEL	12787. (0.60095)
RCUT	12787. (1.00000)
PVICVC	12787. (1.00000)
EPITG	12689. (0.99234)
EPIMAX	12571. (0.99070)
TGER	12549. (0.99825)
TARGF	12285. (0.97896)
DTGTTP	12199. (0.99300)
RTDIF	12056. (0.98828)
DRP	11885. (0.98582)
EIC	11754. (0.98898)
TIC	0. (0.00000)

TGDEDX	11437. (0.97303)
TGENR	10863. (0.94981)
PIGAP	10736. (0.98831)
TGLIKE	10445. (0.97289)
TGB4	0. (0.00000)
PHIVTX1	9221. (0.88281)
PHIVTX2	8955. (0.97115)
CHI567	1510. (0.16862)
NPITG	1510. (1.00000)
VERRNG	1132. (0.74967)
CHI5MAX	1115. (0.98498)
ANGLI	1113. (0.99821)
KIC	1113. (1.00000)
EPIONK	1112. (0.99910)
TGKTIM	0. (0.00000)
TGEDGE	0. (0.00000)
TIMKF	0. (0.00000)
B4EKZ	0. (0.00000)
ALLKFIT	1112. (1.00000)

History of pass2 cuts on Pnn_Pnn12

Cut	events (acc)
Kstops	100000. (1.00000)
TRIGGER	26288. (0.26288)
BOX	10848. (0.41266)
PCUTS	10848. (1.00000)
TDCUTS	10848. (1.00000)
KCUTS	8336. (0.76844)
PRESEL	5131. (0.61552)
RCUT	5131. (1.00000)
PVICVC	5110. (0.99591)
EPITG	5089. (0.99589)
EPIMAX	5054. (0.99312)
TGER	5043. (0.99782)
TARGF	4929. (0.97739)
DTGTTP	4929. (1.00000)
RTDIF	4863. (0.98661)
DRP	4804. (0.98787)
EIC	4797. (0.99854)
TIC	0. (0.00000)

TGDEDX	4711. (0.98207)
TGENR	4428. (0.93993)
PIGAP	4374. (0.98780)
TGLIKE	4227. (0.96639)
TGB4	0. (0.00000)
PHIVTX1	3758. (0.88905)
PHIVTX2	3663. (0.97472)
CHI567	689. (0.18810)
NPITG	689. (1.00000)
VERRNG	489. (0.70972)
CHI5MAX	487. (0.99591)
ANGLI	484. (0.99384)
KIC	484. (1.00000)
EPIONK	484. (1.00000)
TGKTIM	0. (0.00000)
TGEDGE	0. (0.00000)
TIMKF	0. (0.00000)
B4EKZ	0. (0.00000)
ALLKFIT	484. (1.00000)

Discussion

- MC truth is correctly extracted.
- Rejection of T_{xtg} might be physically correlated with the PV cuts on the other subsystems.
- Further study on cut CHI567 will be done.
- Some cuts based on SWATHCCD could be removed if it is not correlated with T_{xtg} cut.