

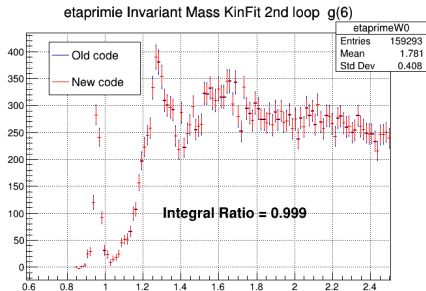
# DSelector Uniqueness Tests

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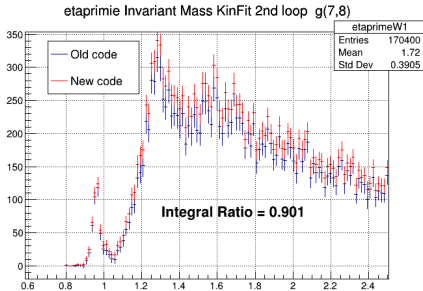
# Compare DSelector Uniqueness Tests

- Both DSelectors have TWO loop approach
- OLD version: uses prompt beam photon ONLY as Weight modifier
- NEW version: uses any beam photon as Weight modifier separately
- Test with:  $\gamma + p \rightarrow \pi^+ + \pi^- + 6\gamma + p$

## FS with $6\gamma$ exactly: Same result



## FS with 7 or $8\gamma$ : 10% difference!



## New DSelector method

Statistics of  $\eta'$  peak:

$N_{\gamma}$ s	Weight	pos	$\sigma$	Integral
6	0	0.958	0.016	844.4
6	1	0.958	0.016	844.7
6	2	0.958	0.016	843.9
7,8	0	0.959	0.020	454.6
7,8	1	0.959	0.020	454.0
7,8	2	0.959	0.020	450.4

Weight:  $0 = \frac{1}{N}$ ,  $1 = \frac{1}{\sum \frac{1}{x_i^2}}$ ,  $2 = \text{best } \chi^2$

Integral:  $\pm 3\sigma$

Simple Gaussian fit: fit range matters, in particular for 7,8 !