

ZHH analysis.

Observables at truth level

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HELMHOLTZ



Cross sections

For pure WBF events

	σ
n1n1hh	0.04078 ± 0.00005
n1n1hh_w	0.01506 ± 0.00002

For total vvhh production

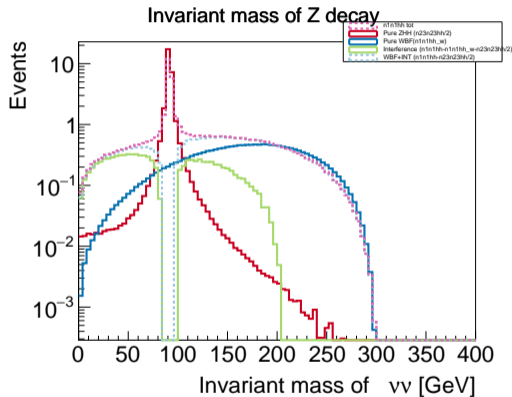
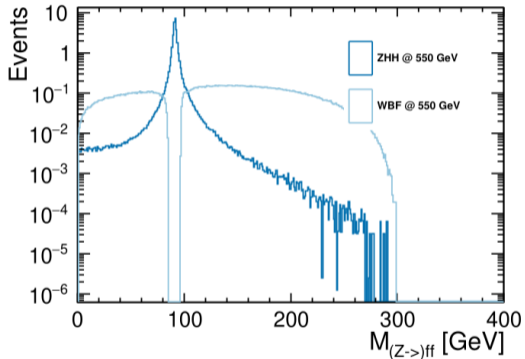
	σ
n1n1hh	0.04074 ± 0.00005
n23n23hh	0.05006 ± 0.0003

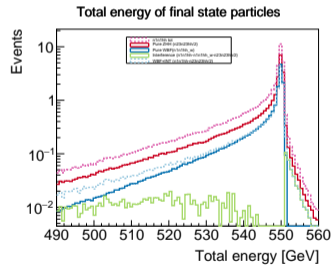
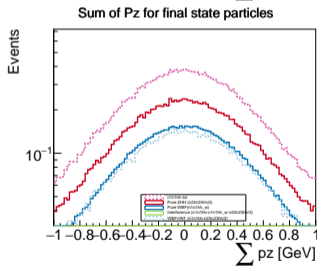
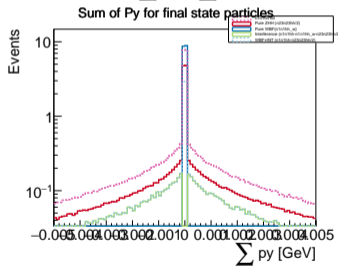
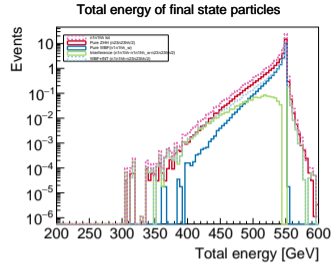
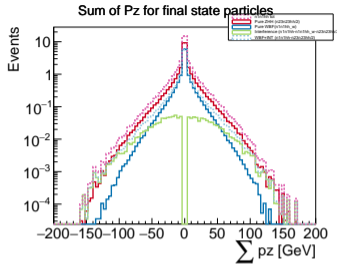
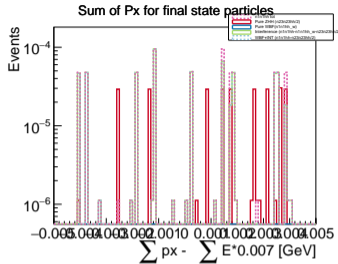
$$\sigma_{INT} = \sigma_{n1n1hh} - \sigma_{WBF} - \sigma_{ZHH} = 0.04078 - 0.01506 - \frac{1}{2}0.05006 = 0.00069 \quad (1)$$

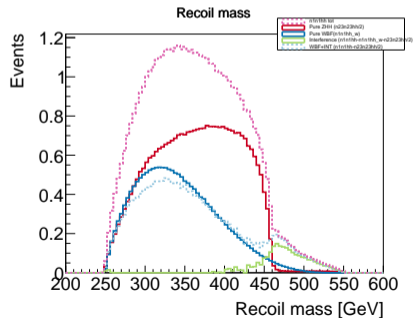
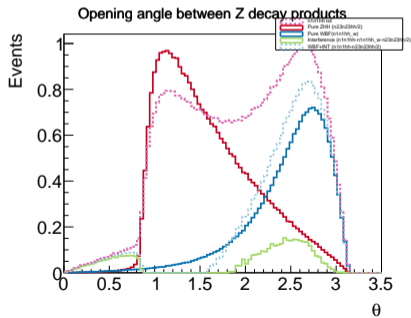
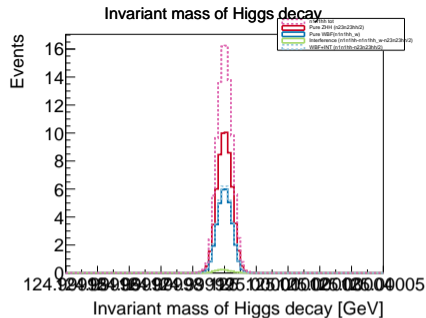
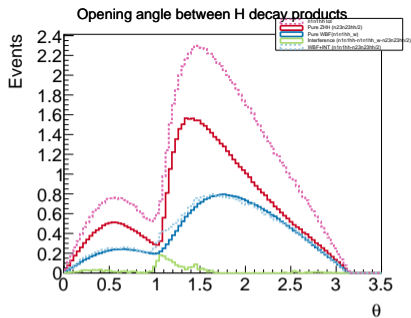
Contributions to total n1n1hh cross sec:

$$\frac{0.00069}{0.04078} = 1.7\%, \quad \frac{0.01506}{0.04078} = 36.9\%, \quad \frac{0.02503}{0.04078} = 61.4\% \quad (2)$$

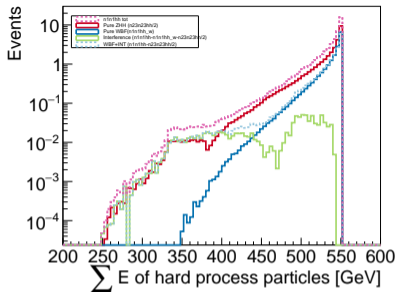
Pure WBF events with whizard



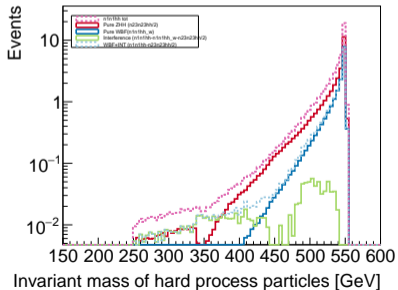




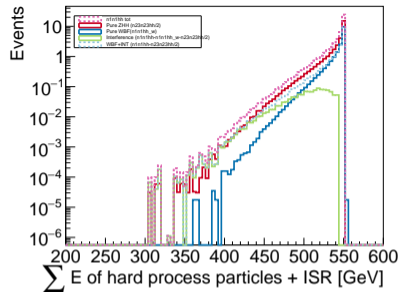
Total energy of initial fermions



Invariant mass of initial fermions



Total energy of initial fermions + ISR



ISR energy

