



MUSI 2026

Nana Ozaki



Study of Non-Resonant HH to bbyy Channel

Search for Di-Higgs Production



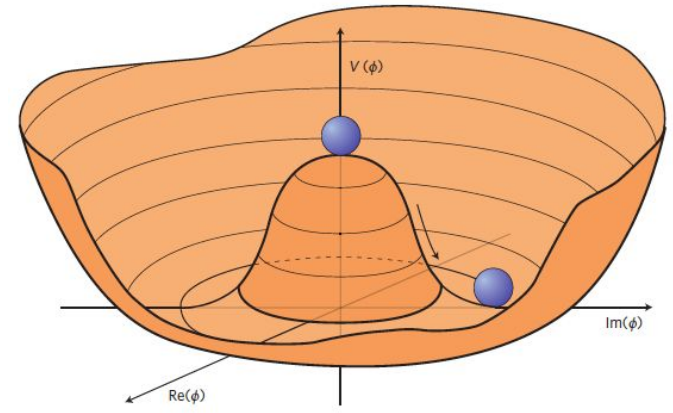
Goal

Understanding the nature of the Higgs Field through di-Higgs search!

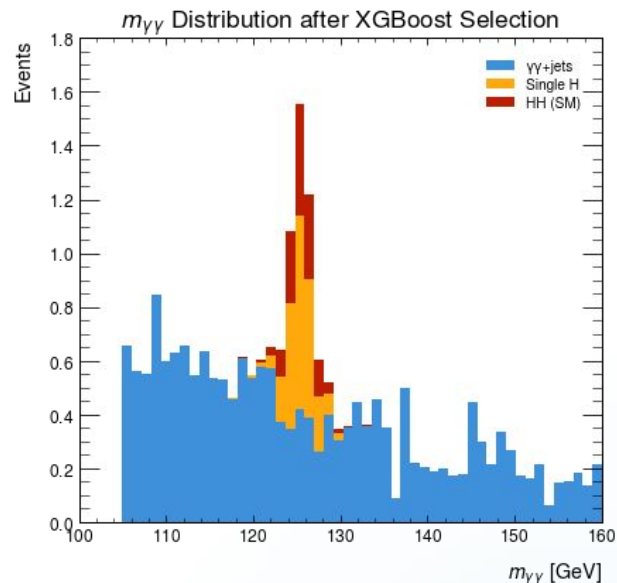
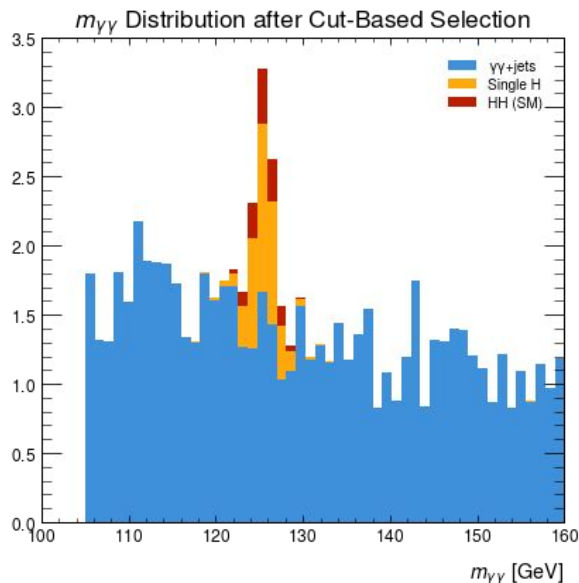
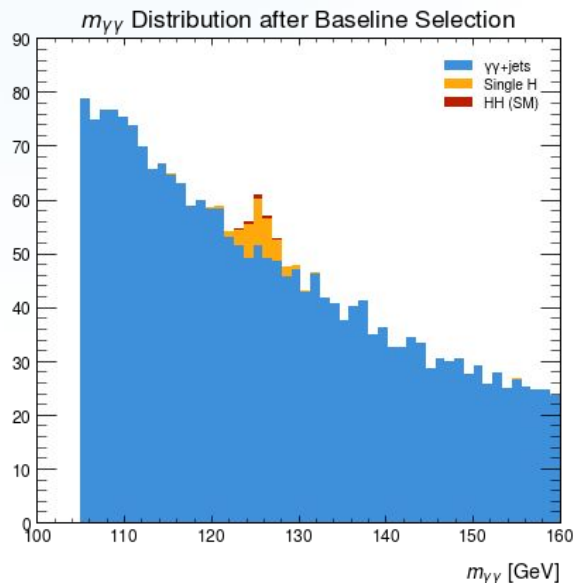
Analysis of the di-photon mass spectrum, $m_{\gamma\gamma}$.

Method

Applying Machine Learning algorithms (BDT, NN) to maximize signal-background separation.



A Few Results from My Research...



	Cut-Based	XGBoost
- Signal remained:	52.15%	54.00%
- Background rejected:	96.92%	99.10%
- Counting Significance:	0.154	0.292

MUSI and Beyond!

Favourite Moment: CERN Trip!

Next Journey: DESY, Hamburg

Future Path: Continue Research!



Merci Beaucoup!

A massive thank you to everyone who made this summer possible.

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