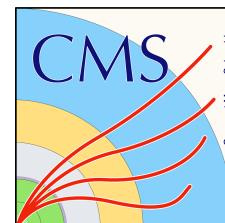


Weekly Report

NTUA

21/2/2020

George Bakas, Ioannis Papakrivopoulos



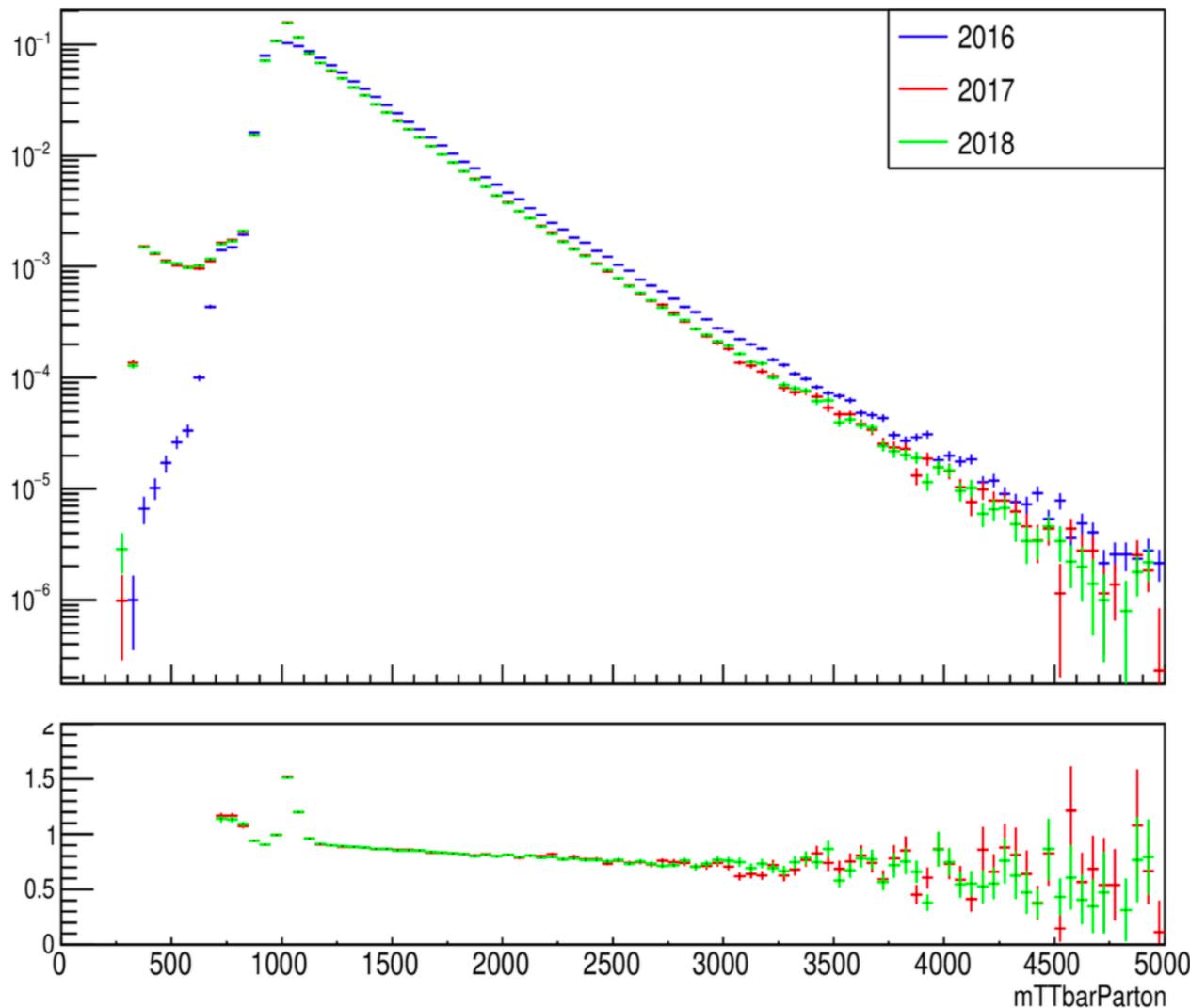
Status Report

- Analysis:
 - Efficiency and Acceptance:
 - Parton and Particle
 - Nominal MC samples
 - mTT samples → Giannis calculated the corrected xsec
 - 2017 and 2018 we use only the 100—Inf file
 - MC '16 , '17, '18 Comparison:
 - All Slices Comparison
 - Mtt slice comparison for 16/17 and 17/18
 - Nominal MC per slice comparison for 17/18
- NTUA HEP Site
- HEP Data for TOP-18-013
 - Building code to make the tables conversion generic
 - Next week overview and instructions for future use



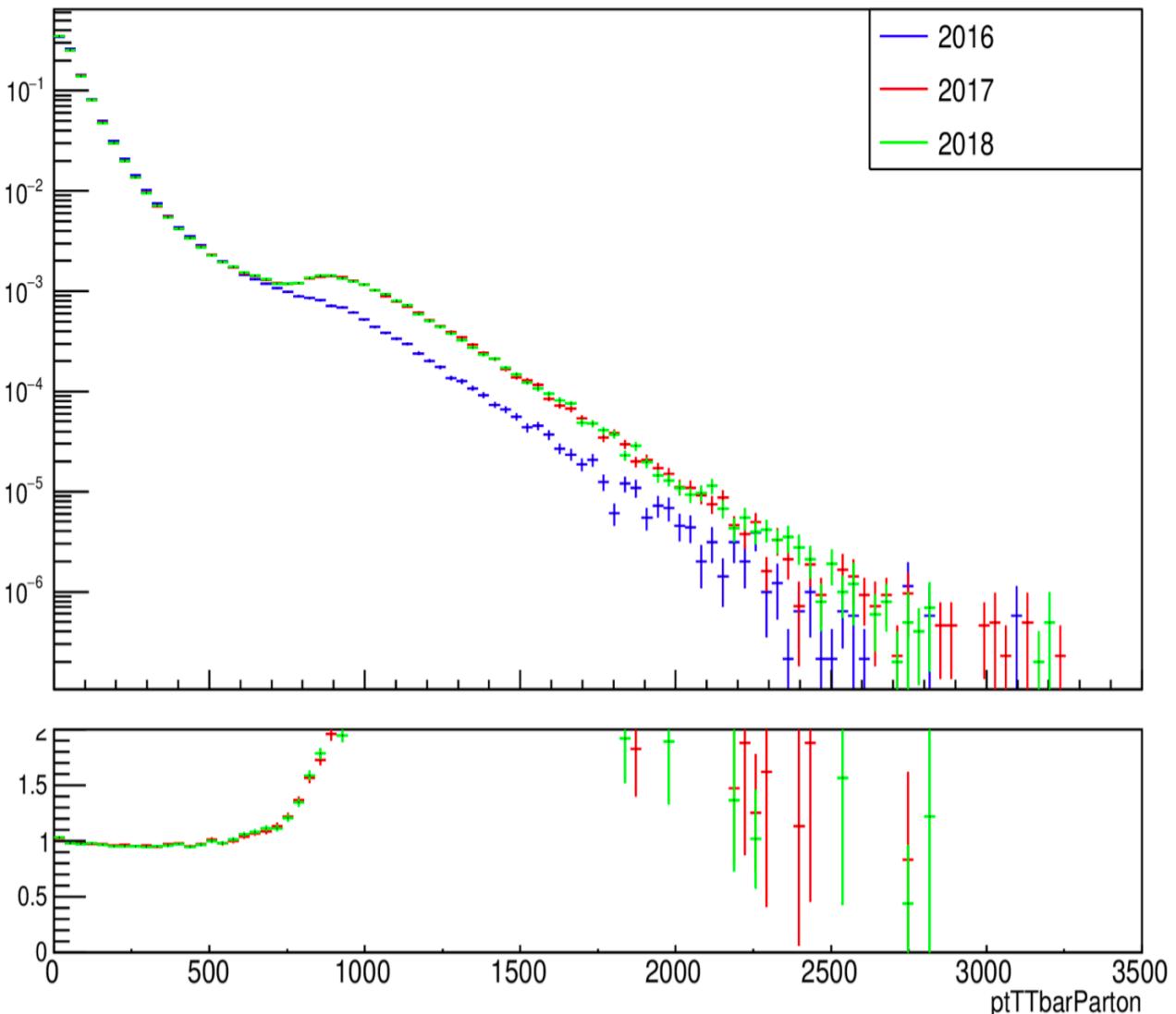
MC Closure tests '16, '17 and '18 (shape) for mtt files

m $\bar{T}T$ barParton



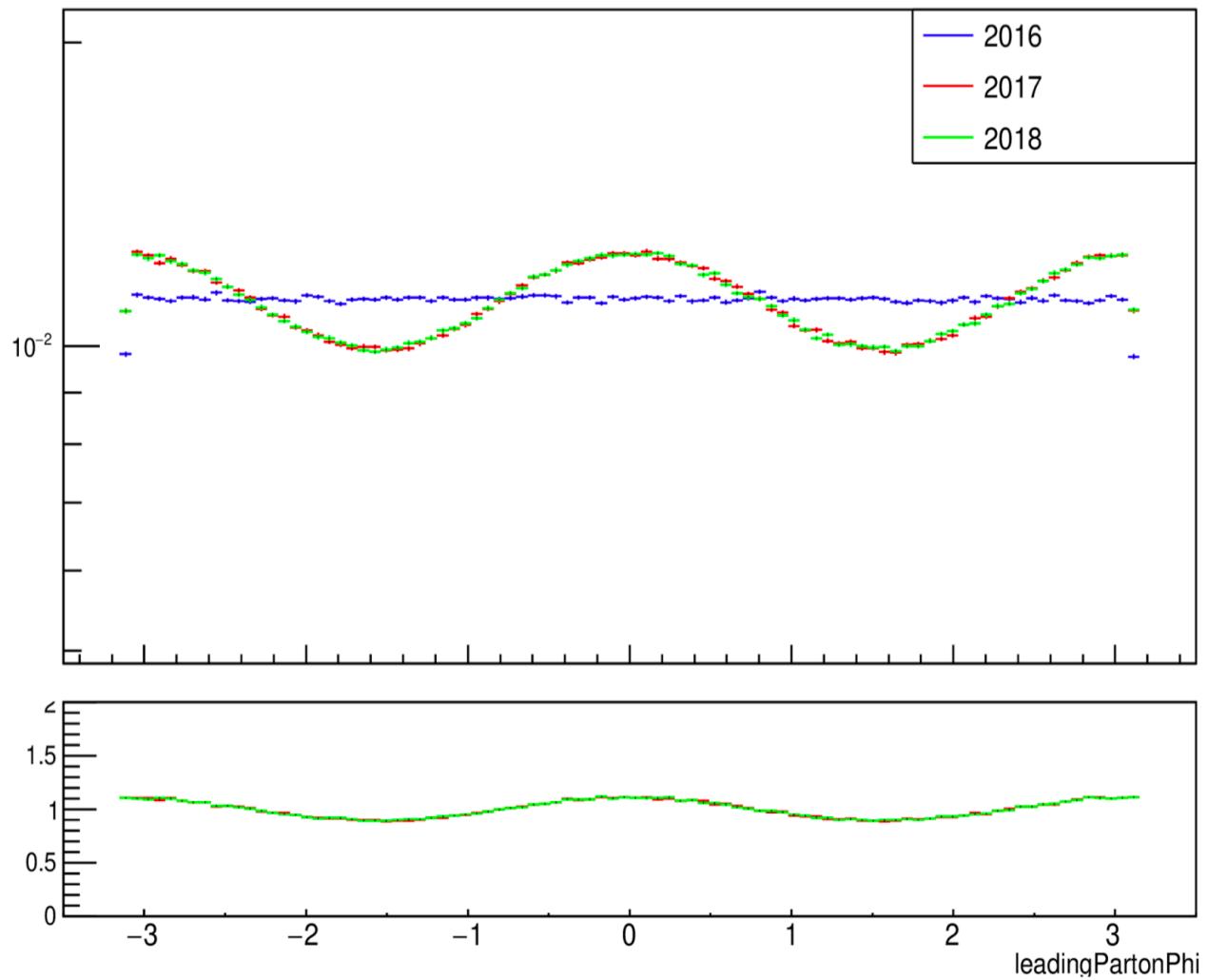
MC Closure tests '16, '17 and '18 (shape) for mtt files

ptTTbarParton



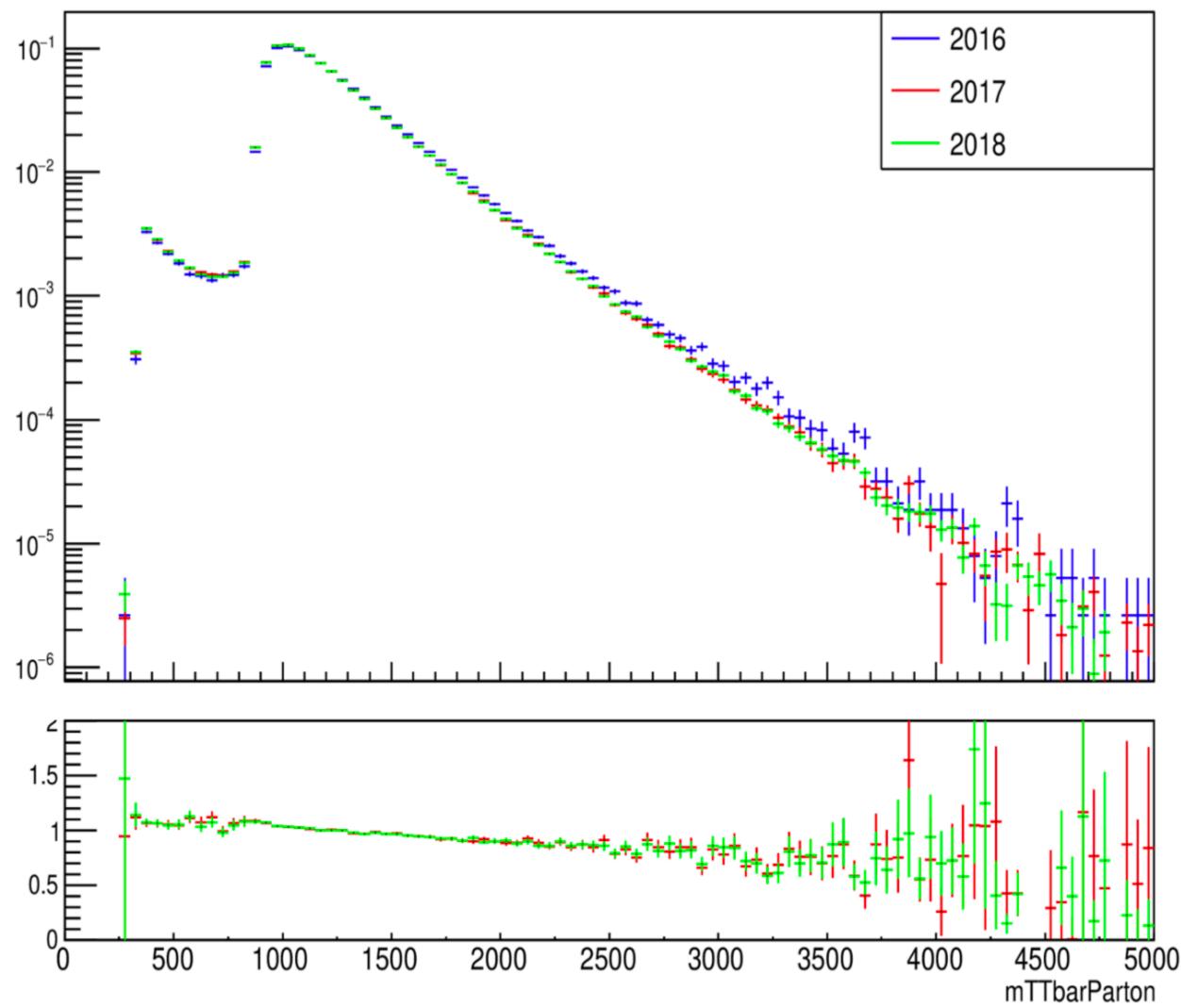
MC Closure tests '16, '17 and '18 (shape) for mtt files

leadingPartonPhi



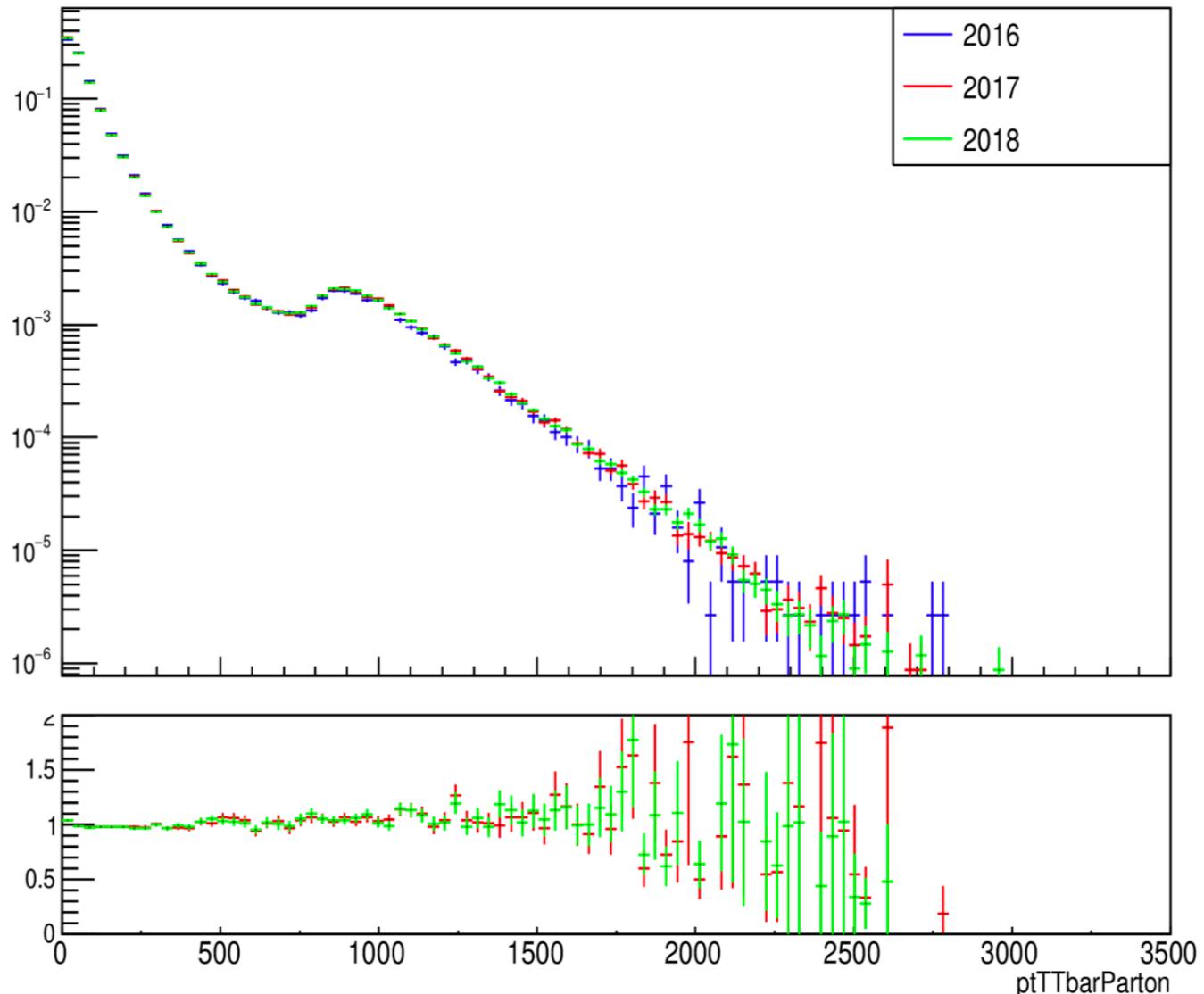
MC Closure tests '16, '17 and '18 (shape) nominal

mTTbarParton_2016

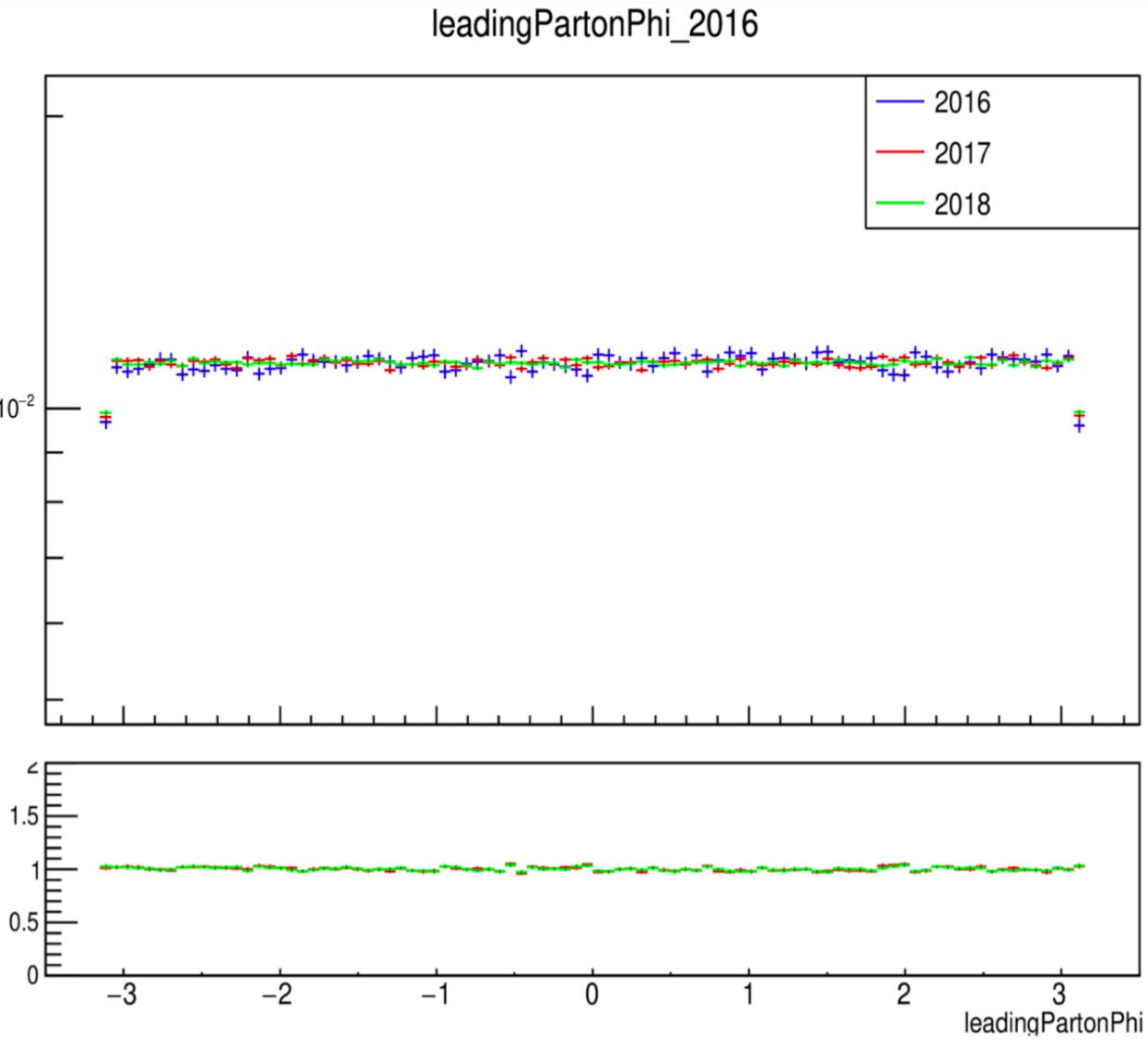


MC Closure tests '16, '17 and '18 (shape) nominal

ptTTbarParton_2016

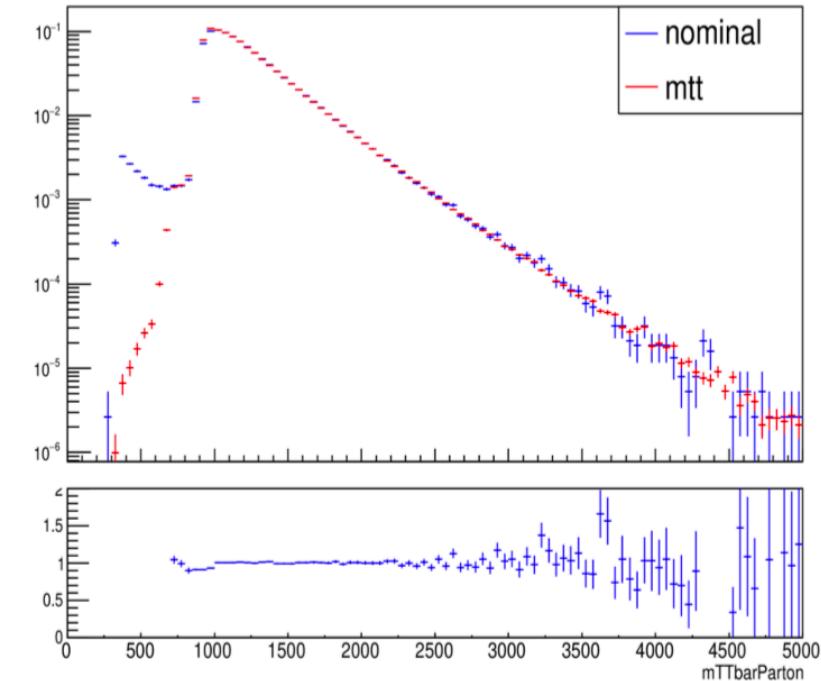


MC Closure tests '16, '17 and '18 (shape) nominal

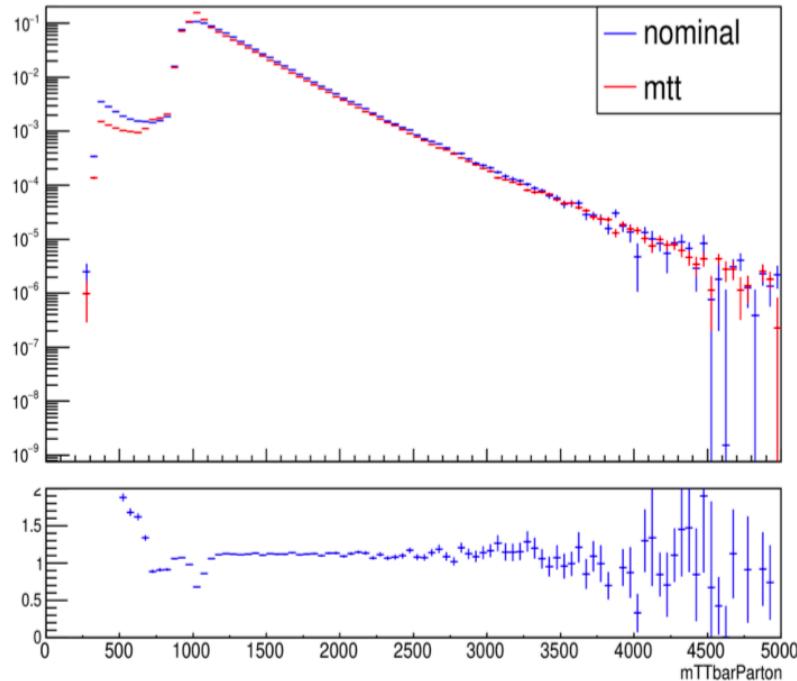


MC Closure Tests Mtt vs Nominal Parton

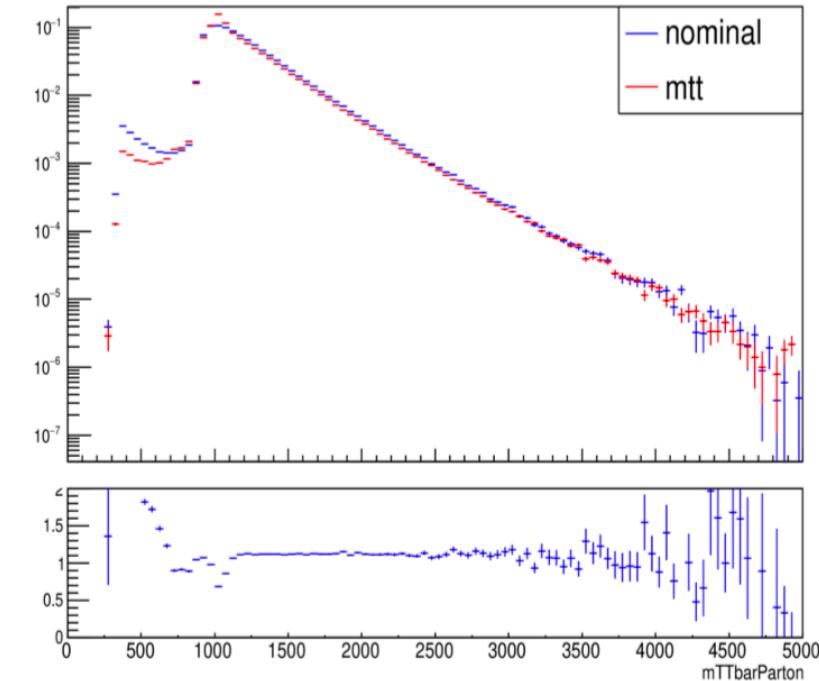
2016



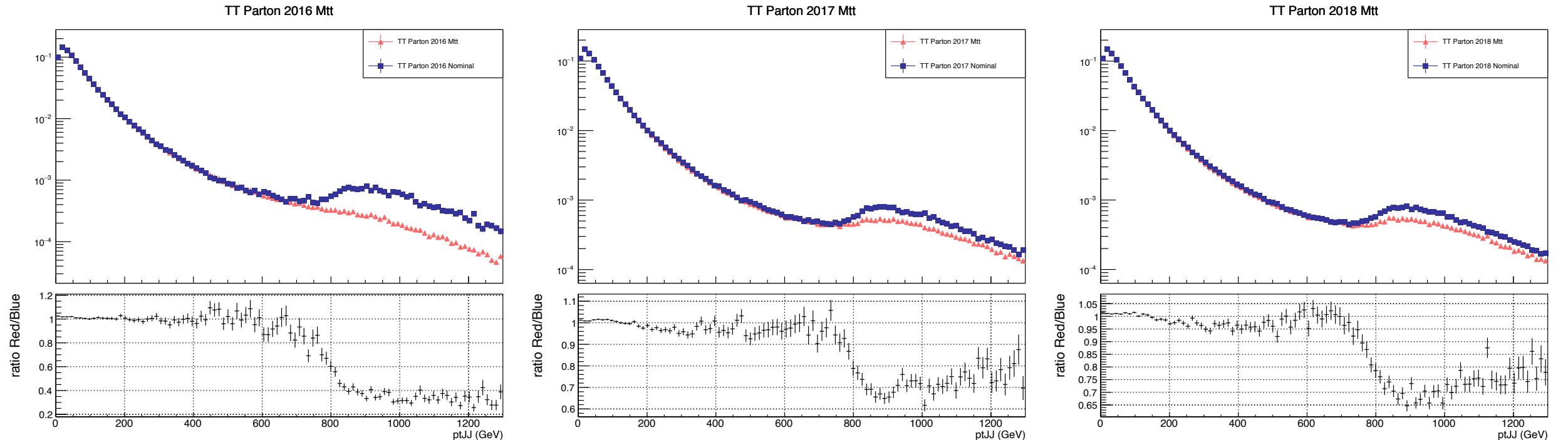
2017



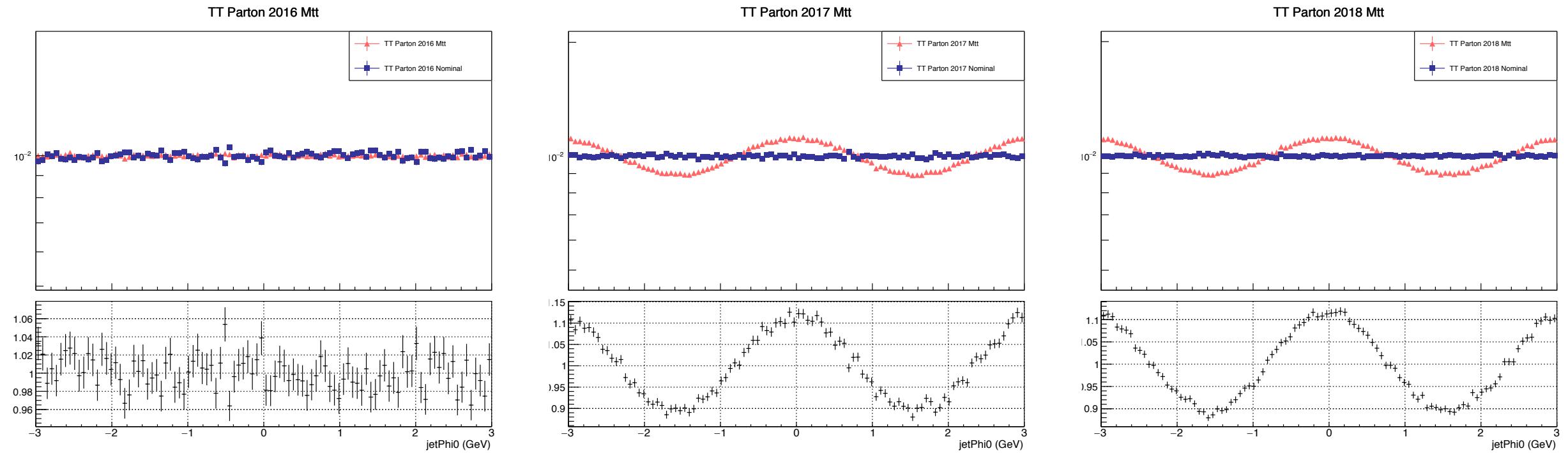
2018



MC Closure Tests Mtt vs Nominal Parton

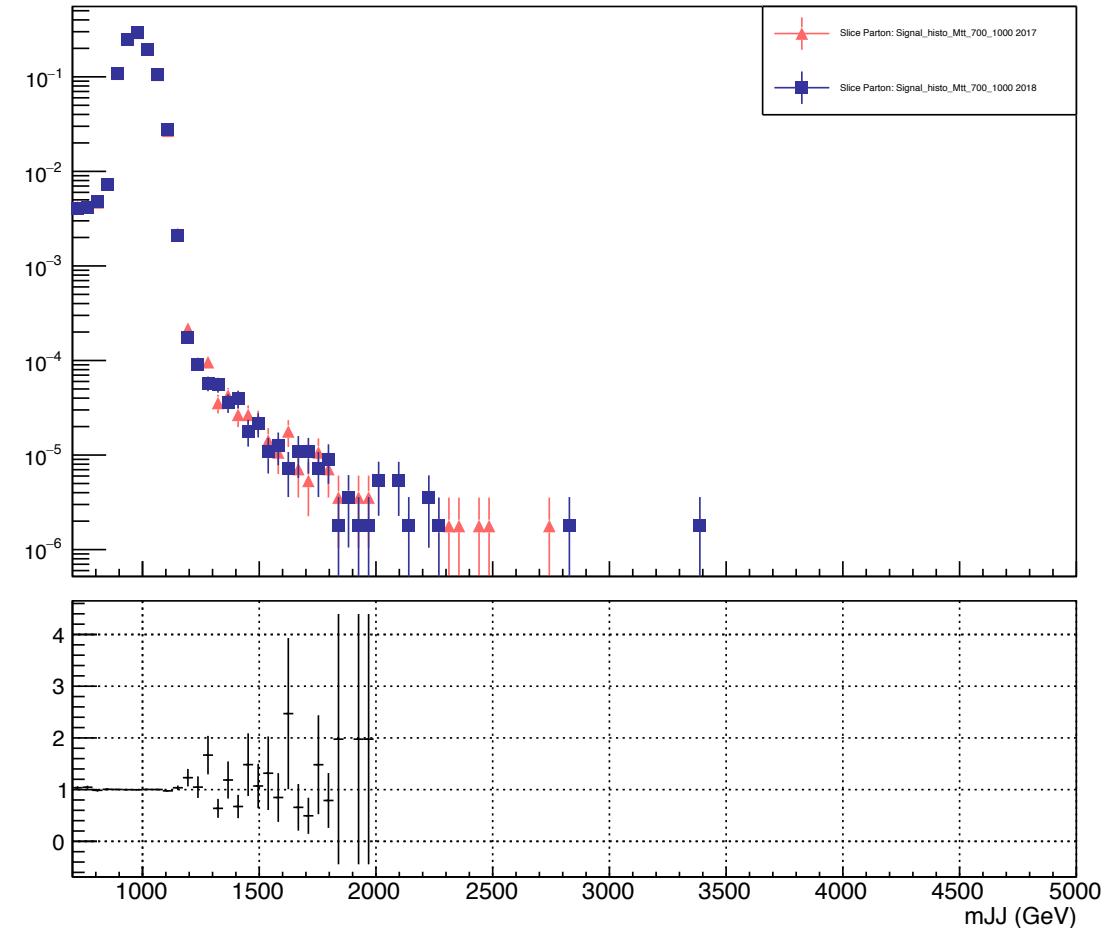


MC Closure Tests Mtt vs Nominal Parton

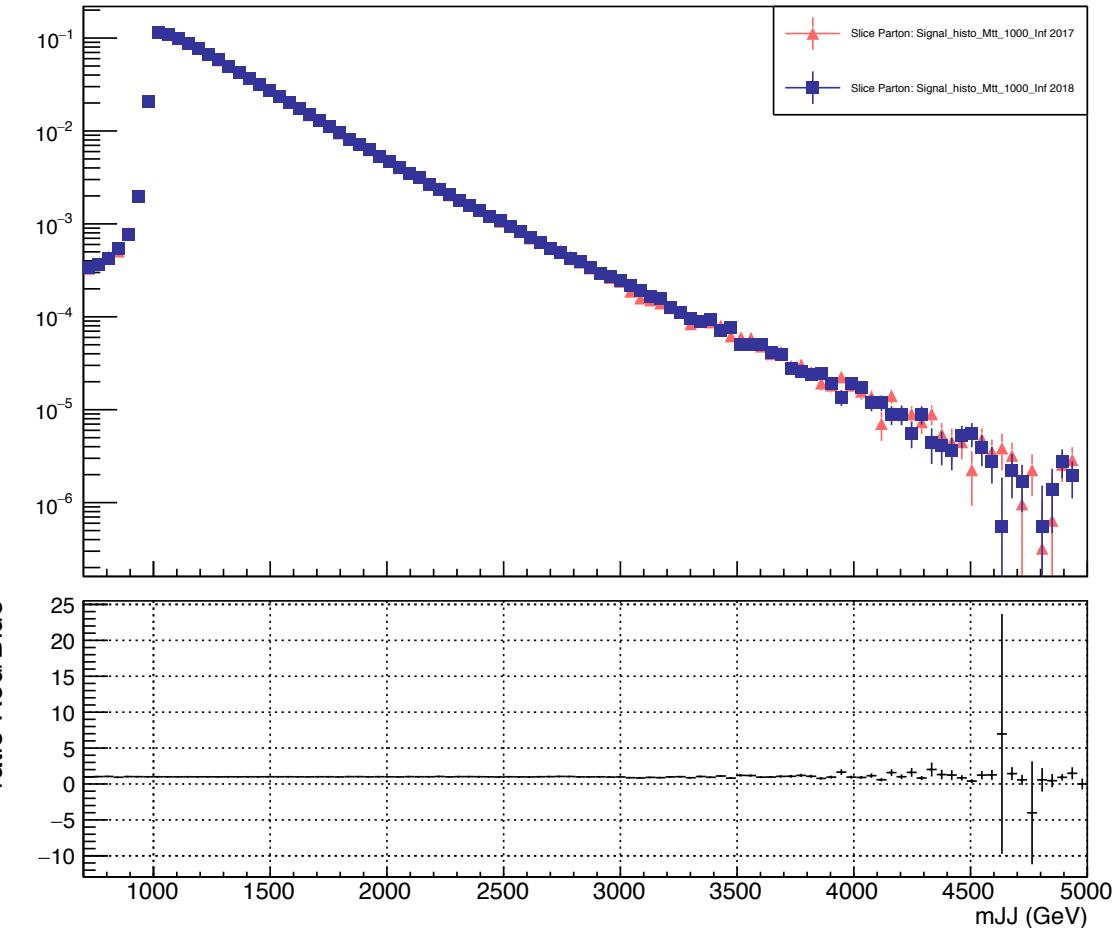


MC Closure Tests Nominal 2017 vs 2018 (shape) per slice

Slice Parton: Signal_histo_Mtt_700_1000 2017

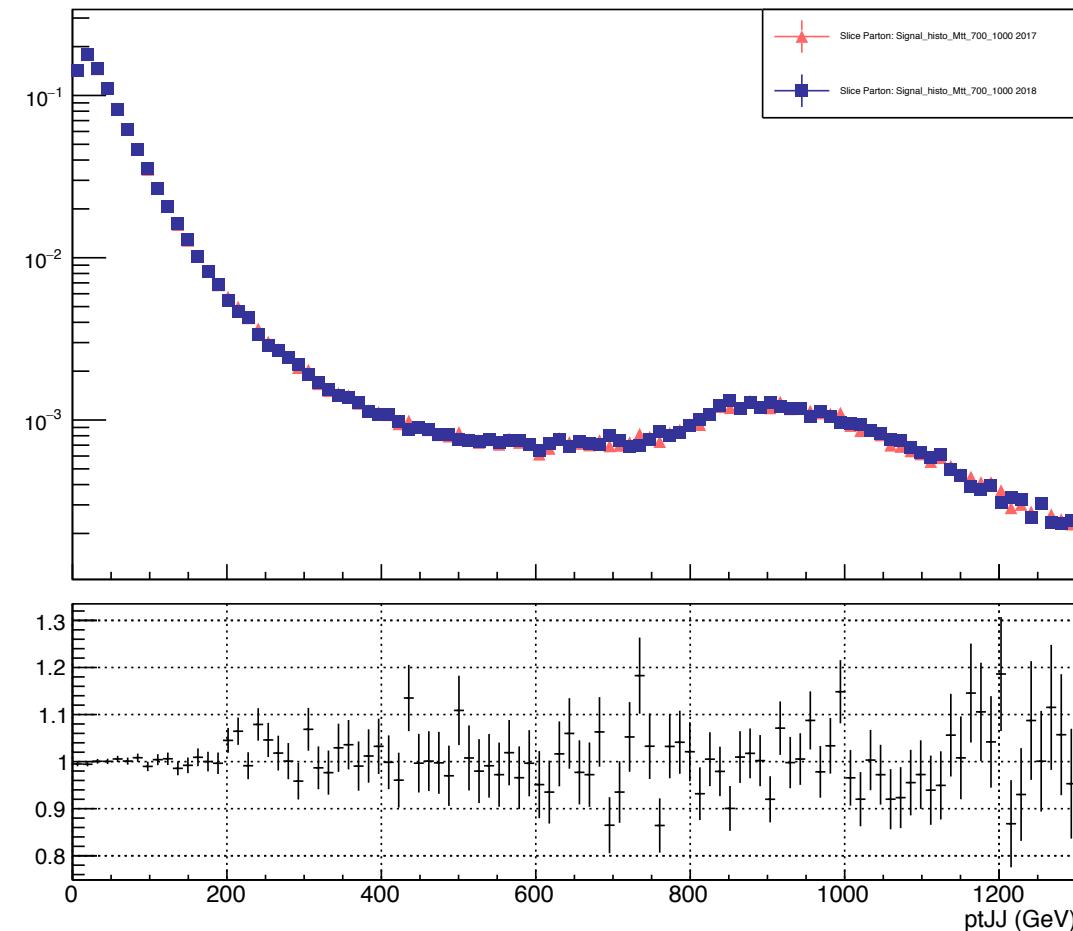


Slice Parton: Signal_histo_Mtt_1000_Inf 2017

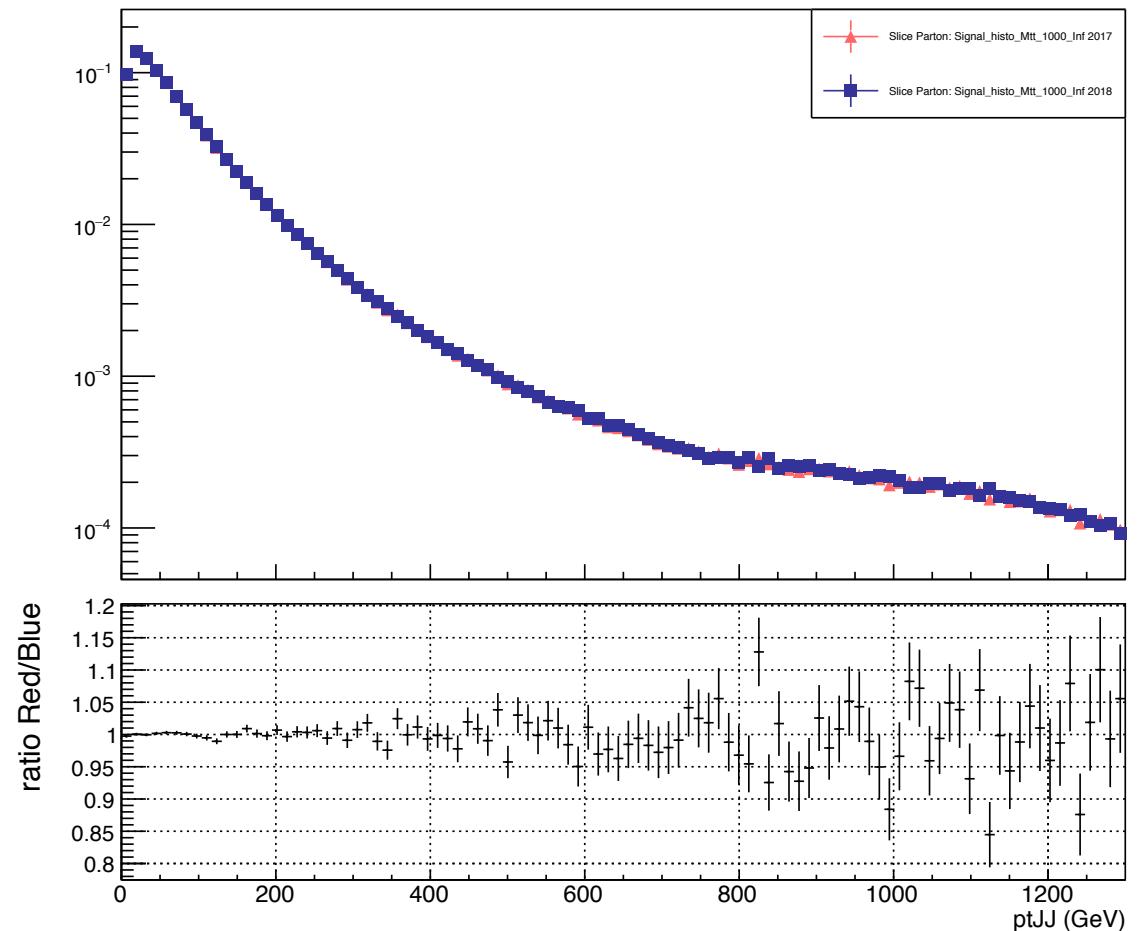


MC Closure Tests Nominal 2017 vs 2018 (shape) per slice

Slice Parton: Signal_histo_Mtt_700_1000 2017

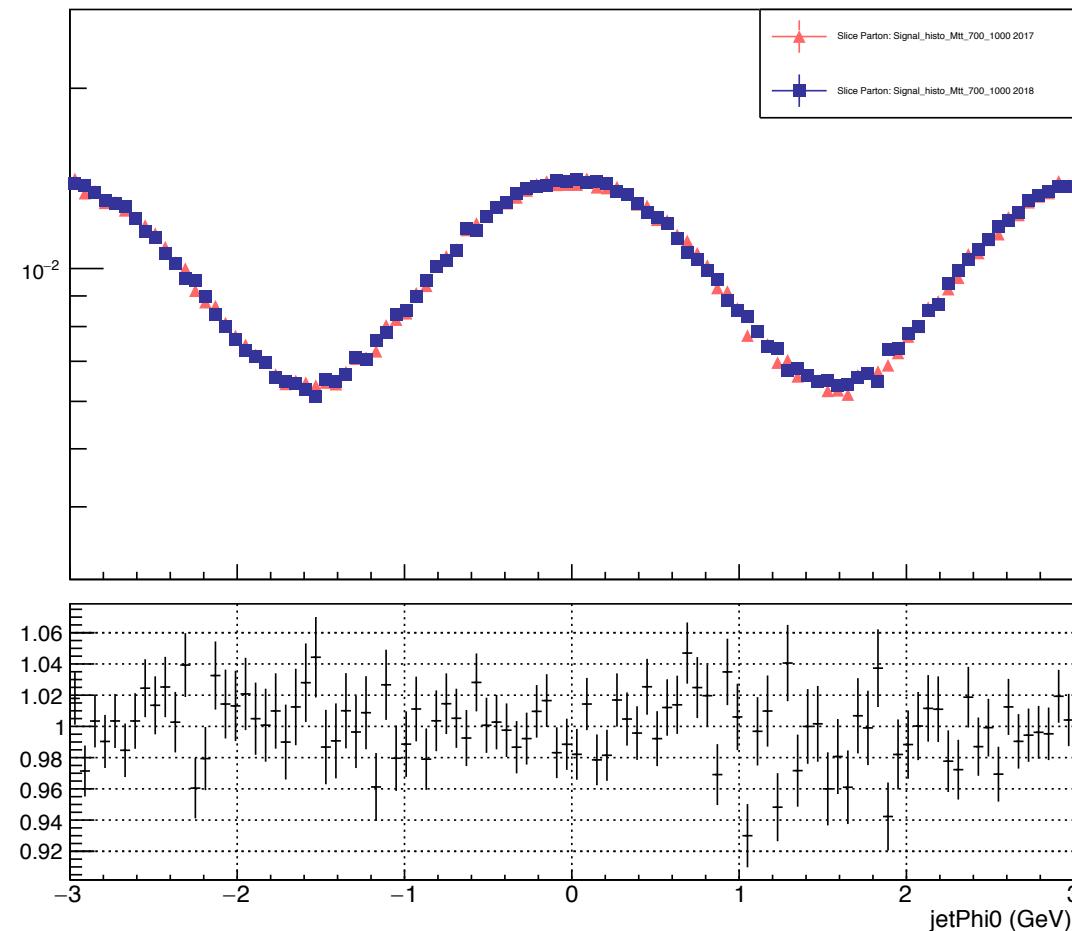


Slice Parton: Signal_histo_Mtt_1000_Inf 2017

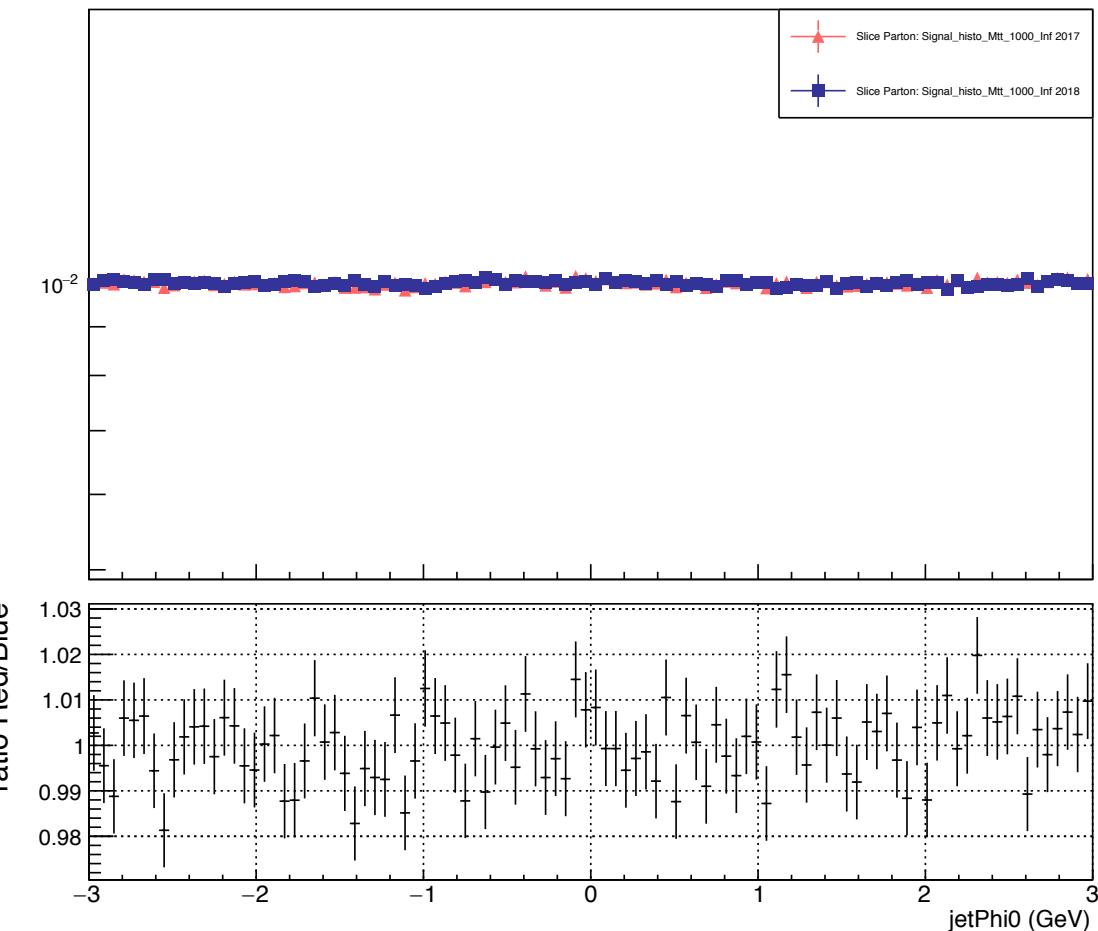


MC Closure Tests Nominal 2017 vs 2018 (shape) per slice

Slice Parton: Signal_histo_Mtt_700_1000 2017

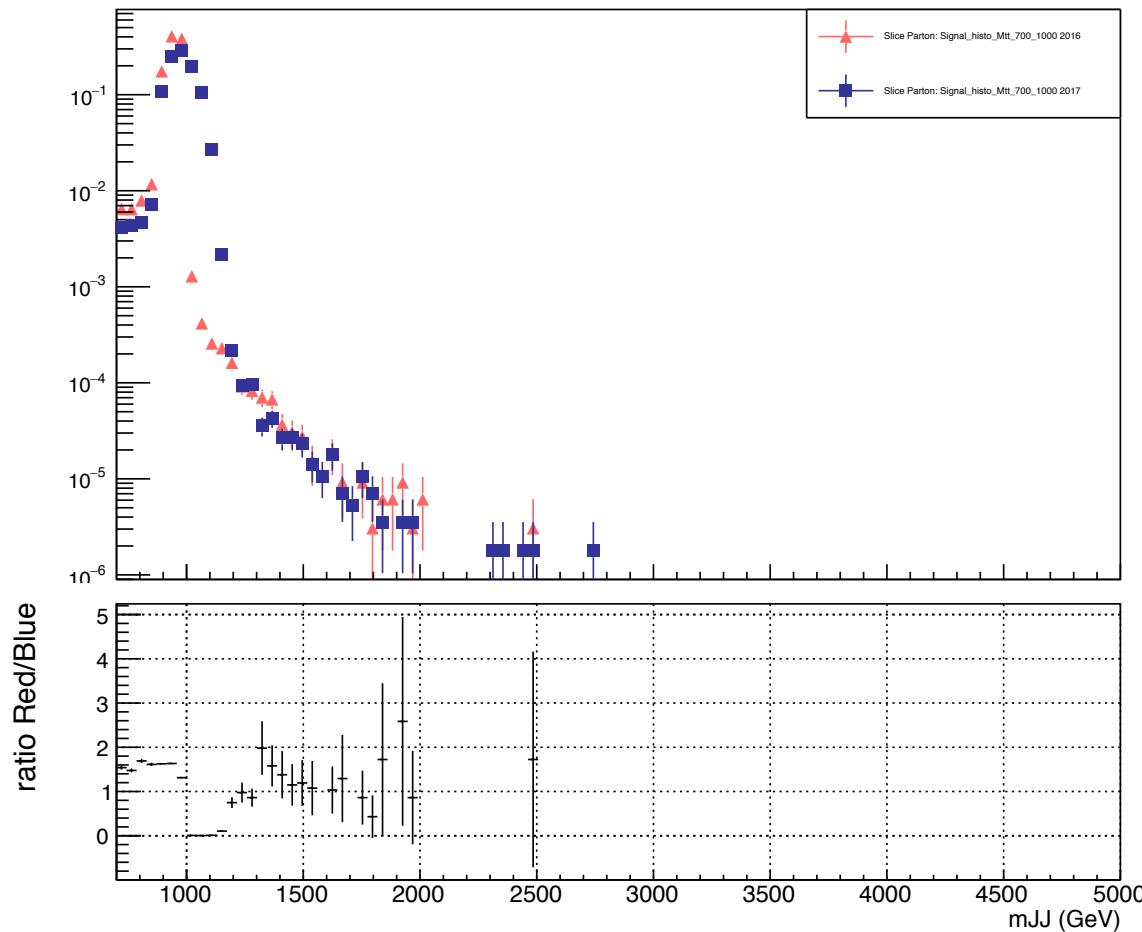


Slice Parton: Signal_histo_Mtt_1000_Inf 2017

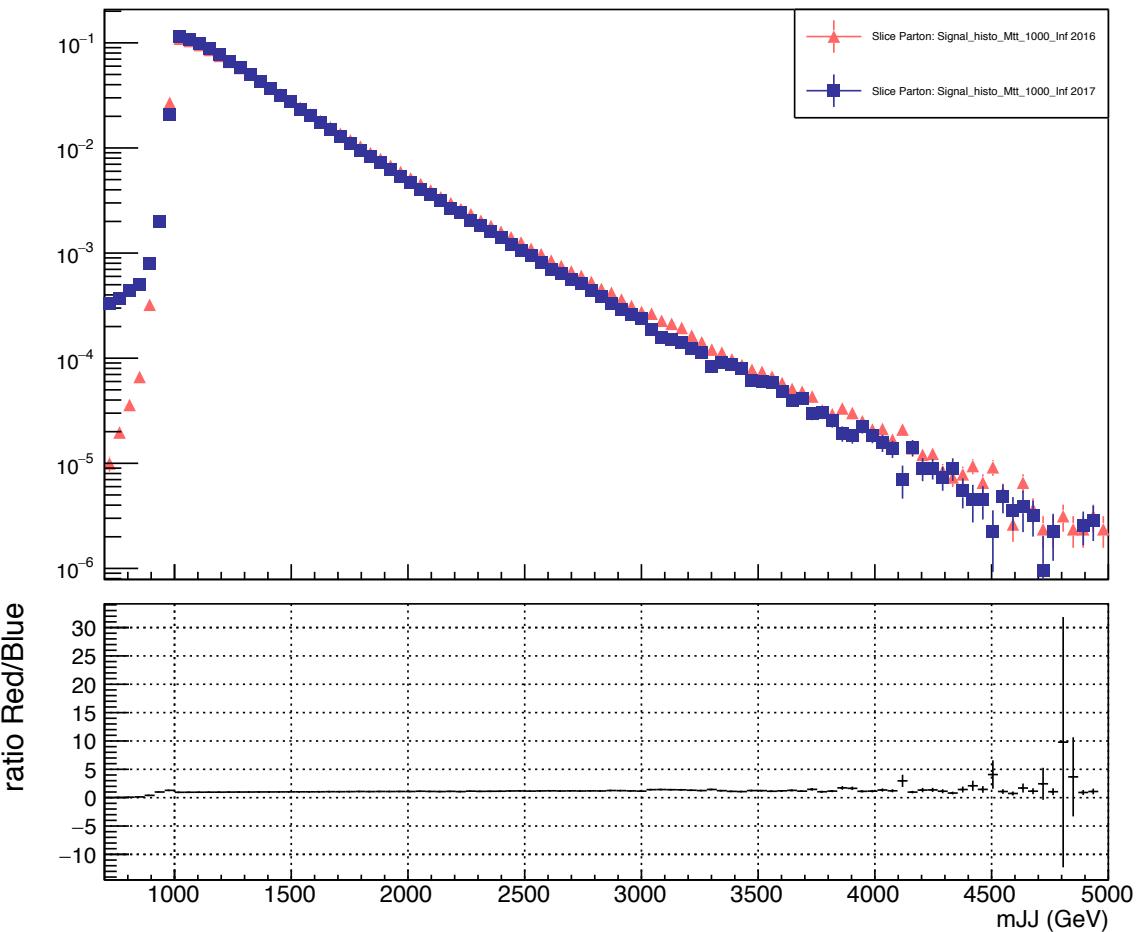


MC Closure Tests Nominal 2016 vs 2017 (shape) per slice

Slice Parton: Signal_histo_Mtt_700_1000 2016

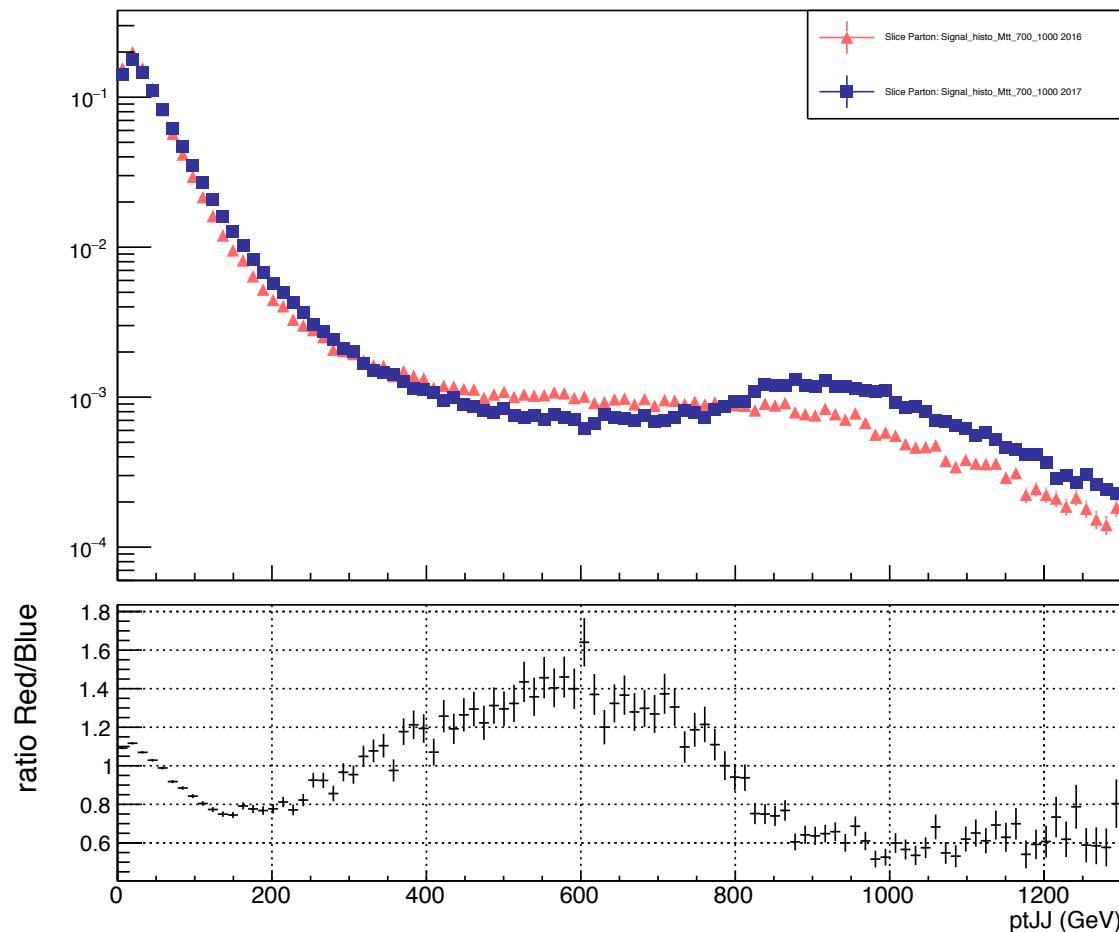


Slice Parton: Signal_histo_Mtt_1000_Inf 2016

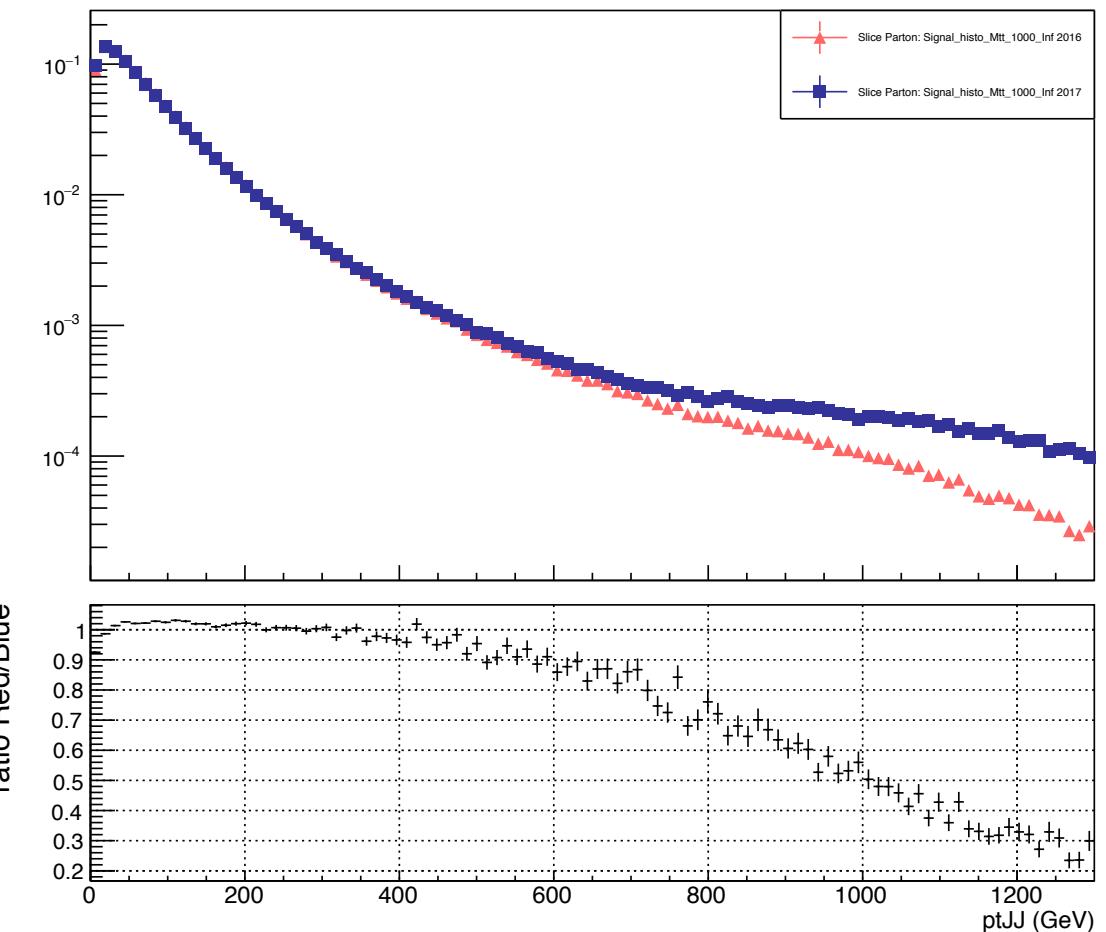


MC Closure Tests Nominal 2016 vs 2017 (shape) per slice

Slice Parton: Signal_histo_Mtt_700_1000 2016

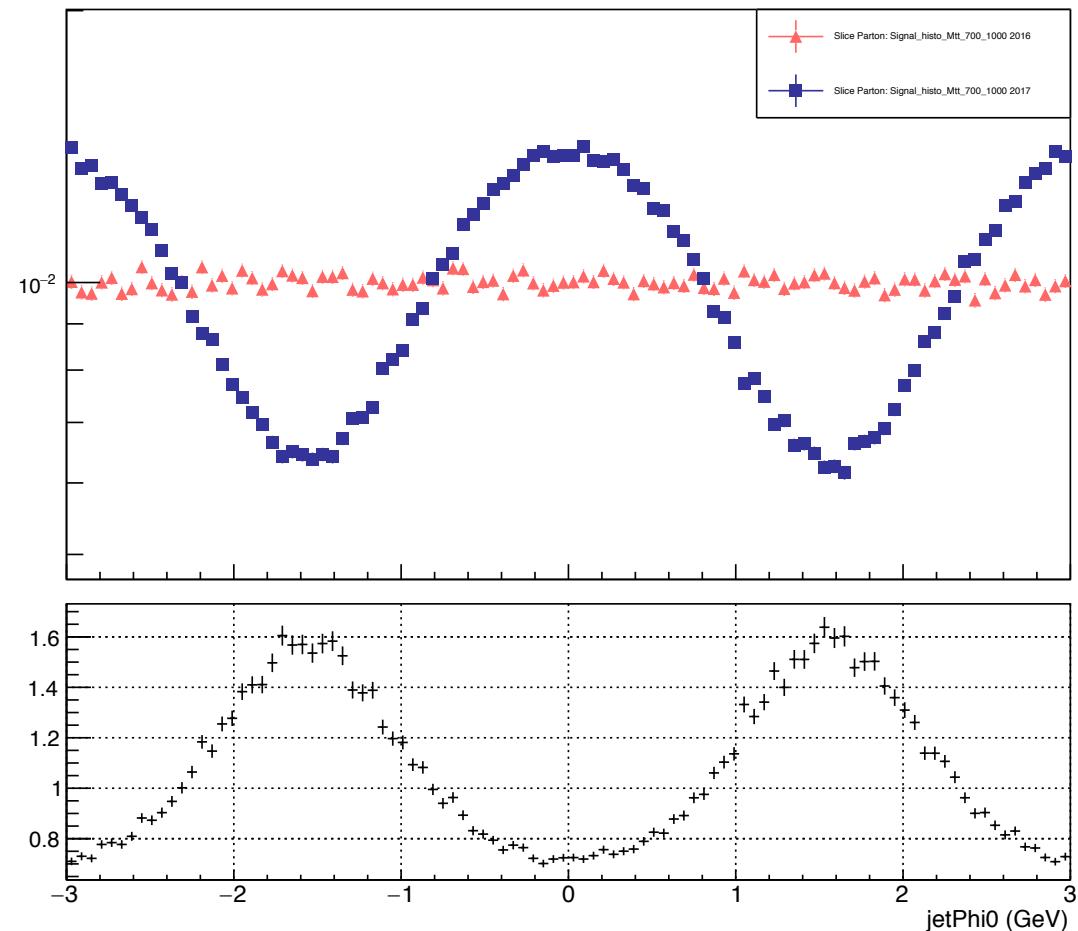


Slice Parton: Signal_histo_Mtt_1000_Inf 2016

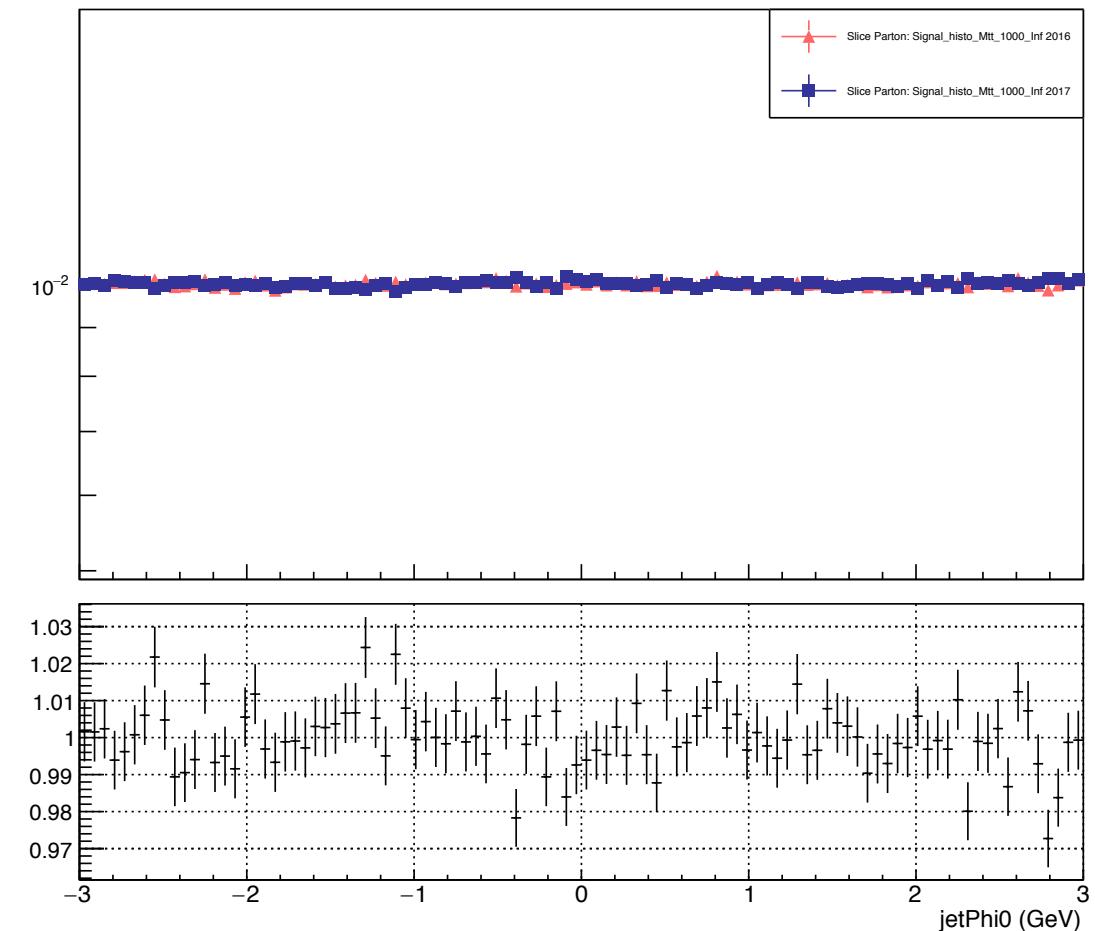


MC Closure Tests Nominal 2016 vs 2017 (shape) per slice

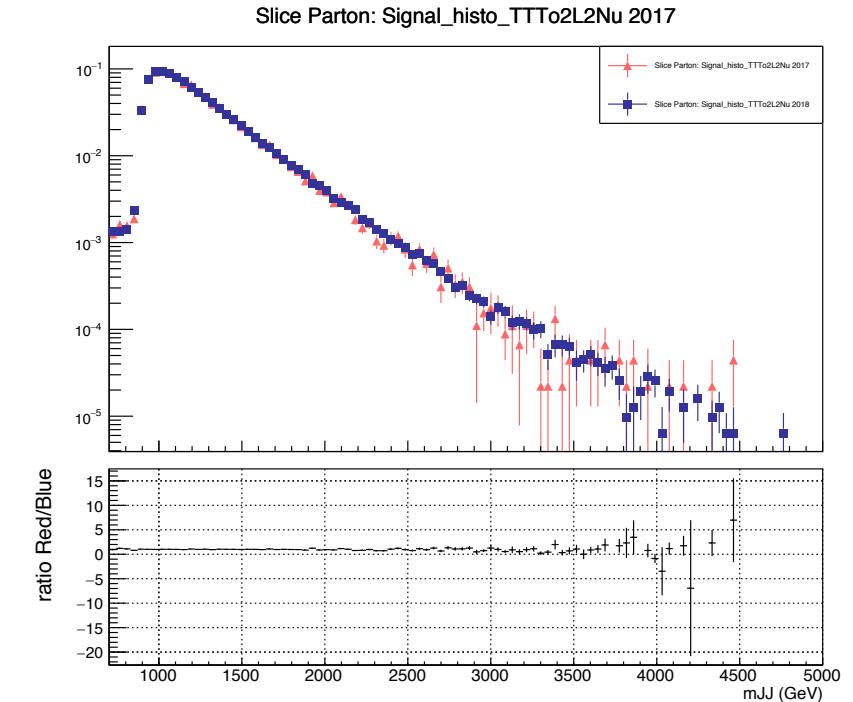
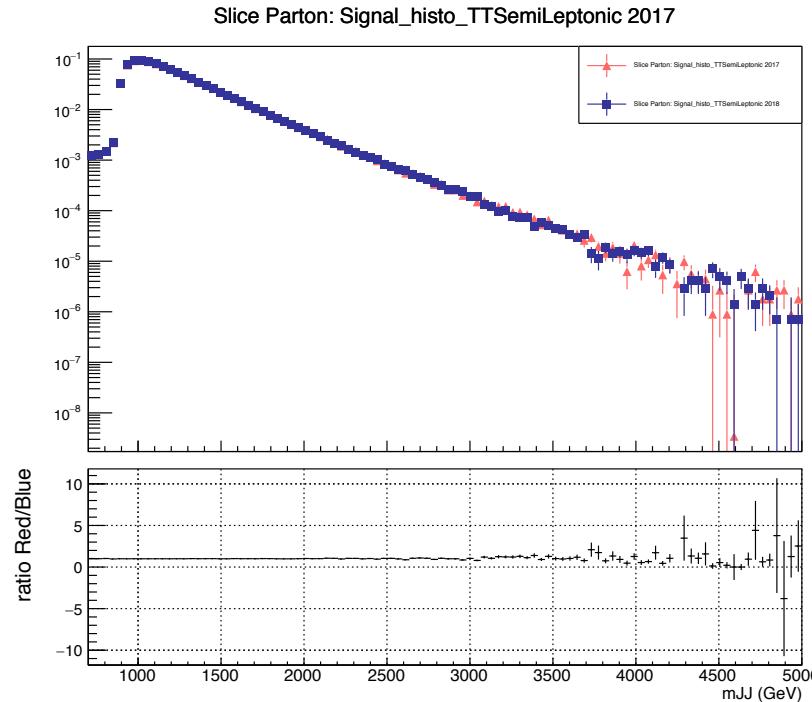
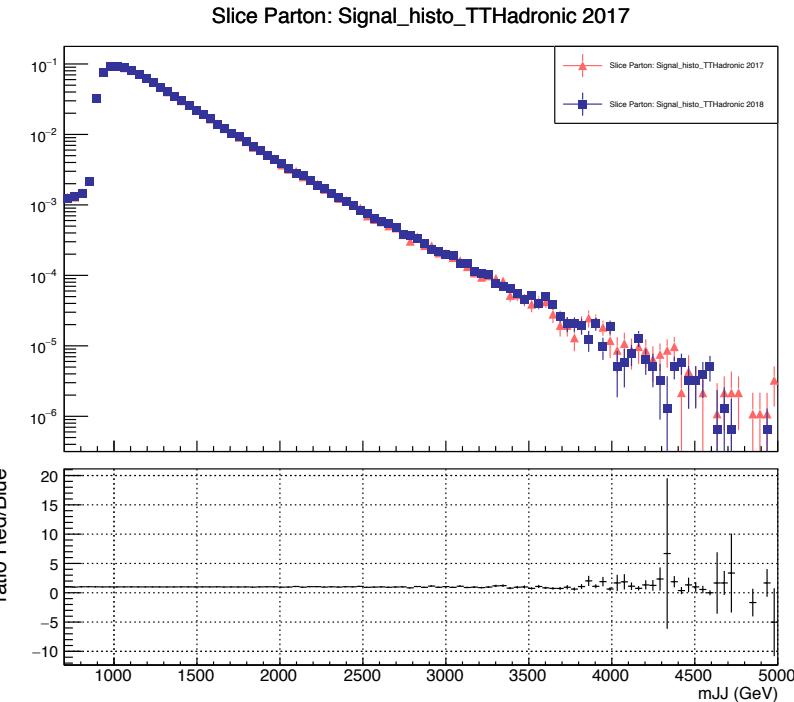
Slice Parton: Signal_histo_Mtt_700_1000 2016



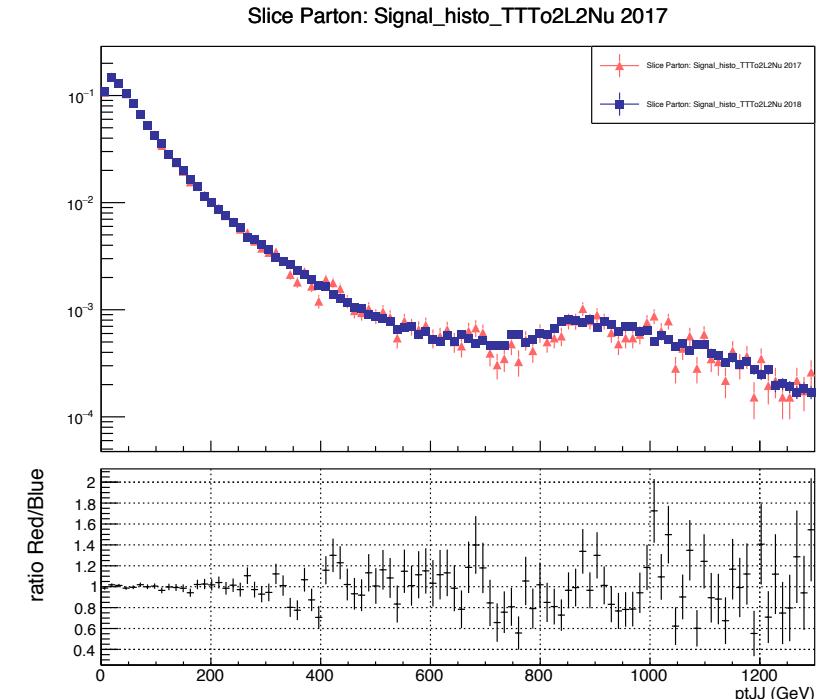
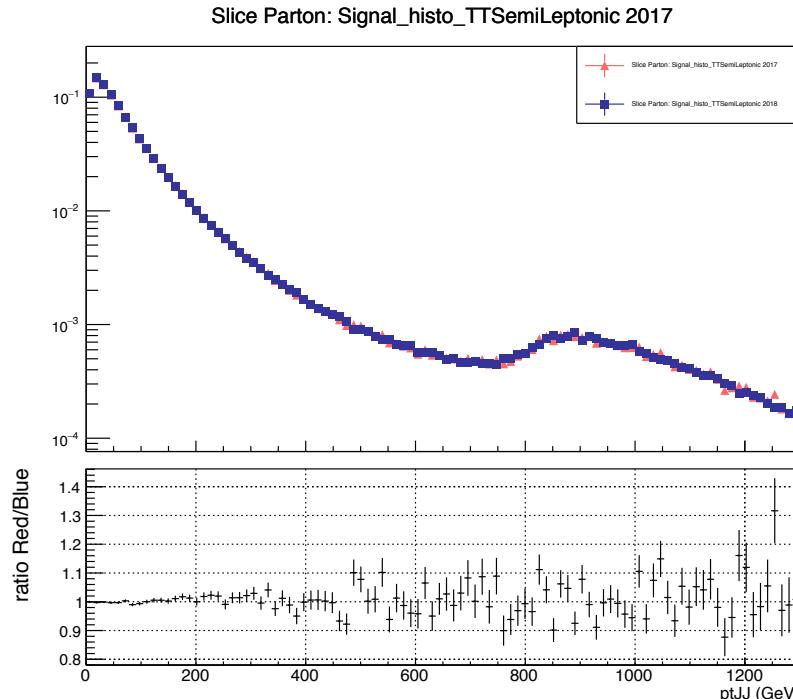
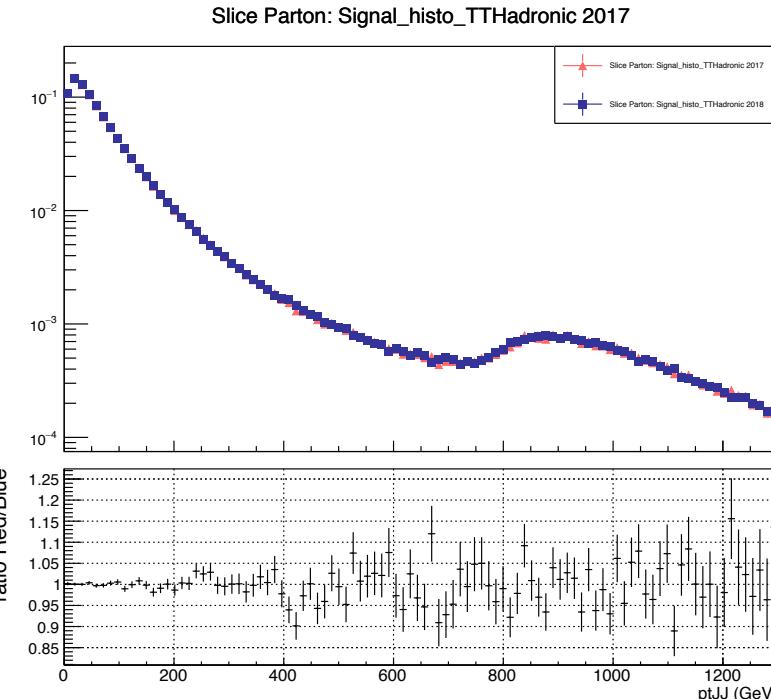
Slice Parton: Signal_histo_Mtt_1000_Inf 2016



MC Closure Tests Nominal 2017 vs 2018 (shape) per slice Nominal

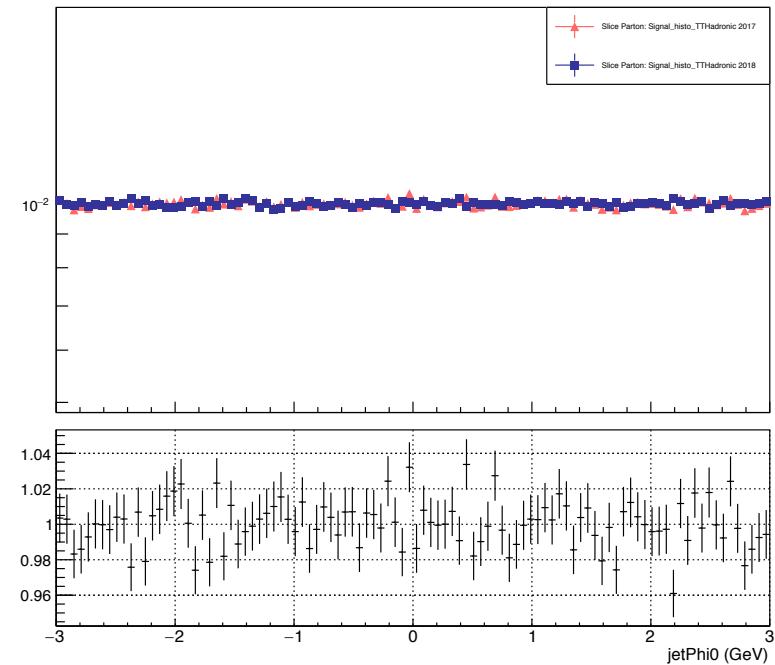


MC Closure Tests Nominal 2017 vs 2018 (shape) per slice Nominal

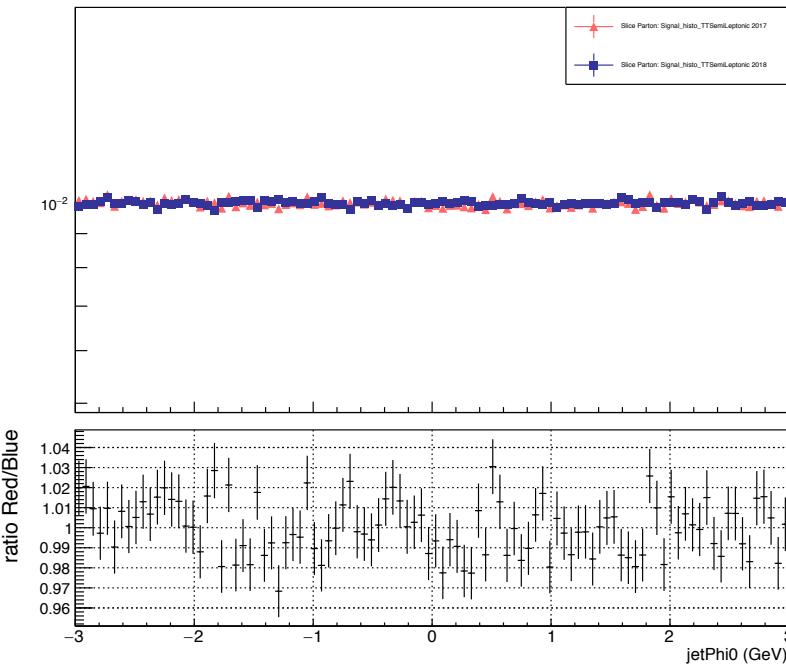


MC Closure Tests Nominal 2017 vs 2018 (shape) per slice Nominal

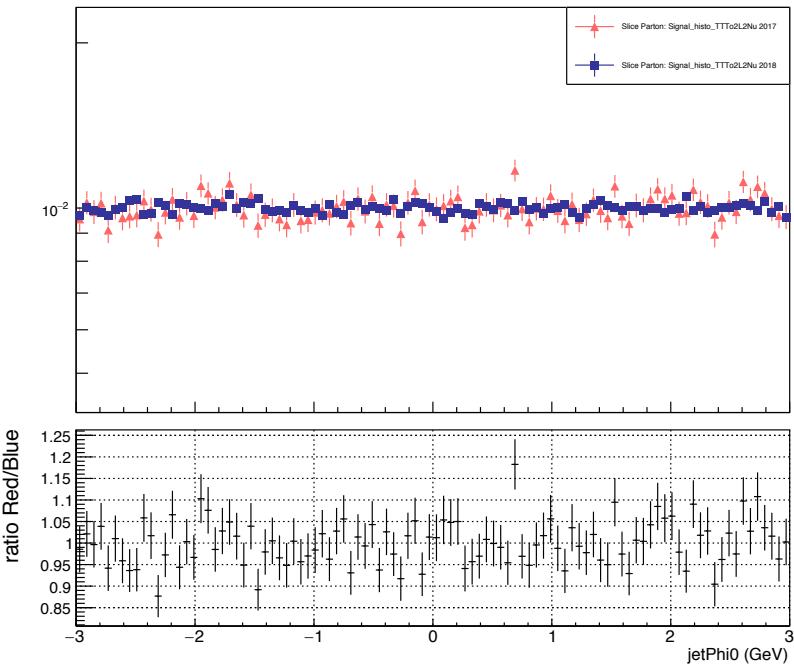
Slice Parton: Signal_histo_TTHadronic 2017



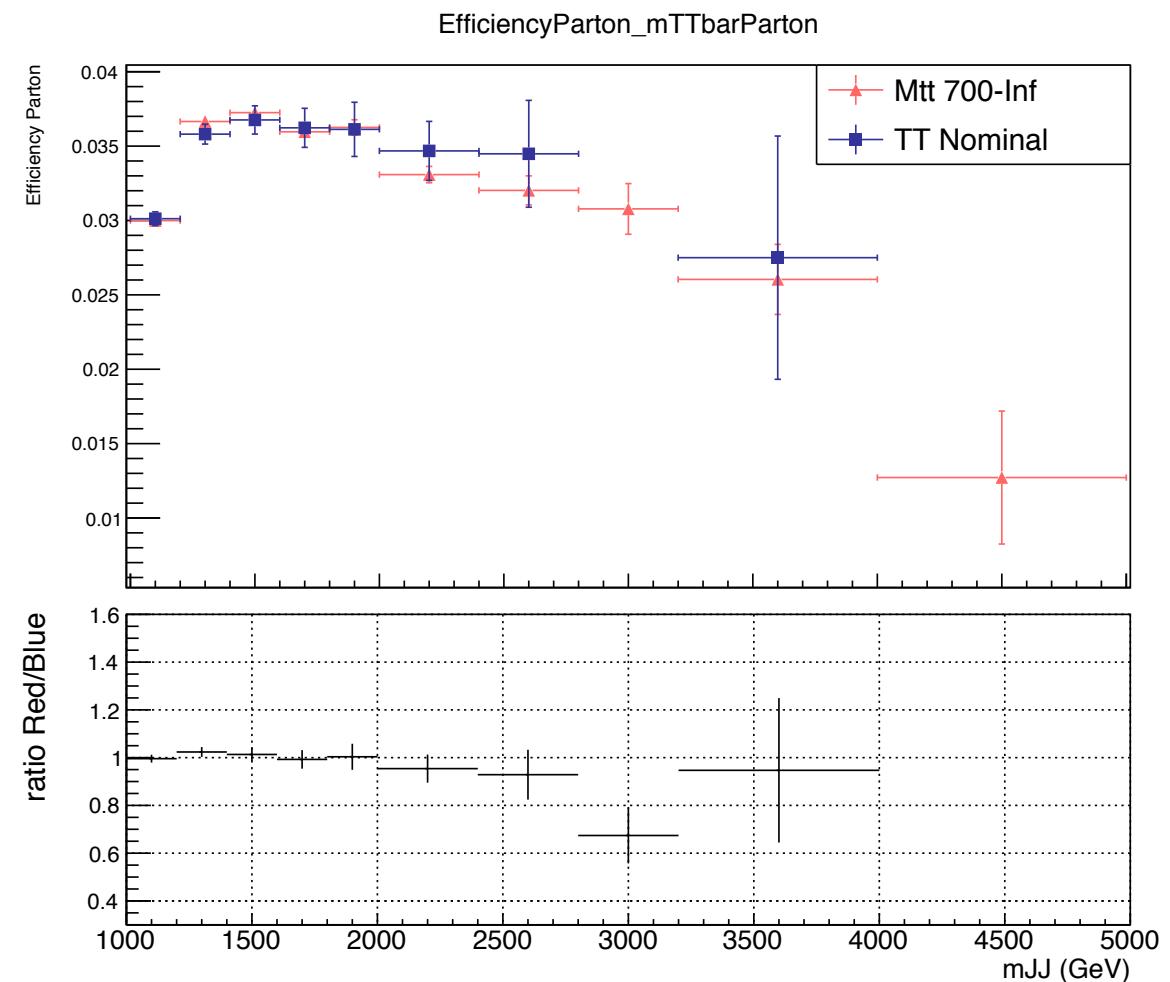
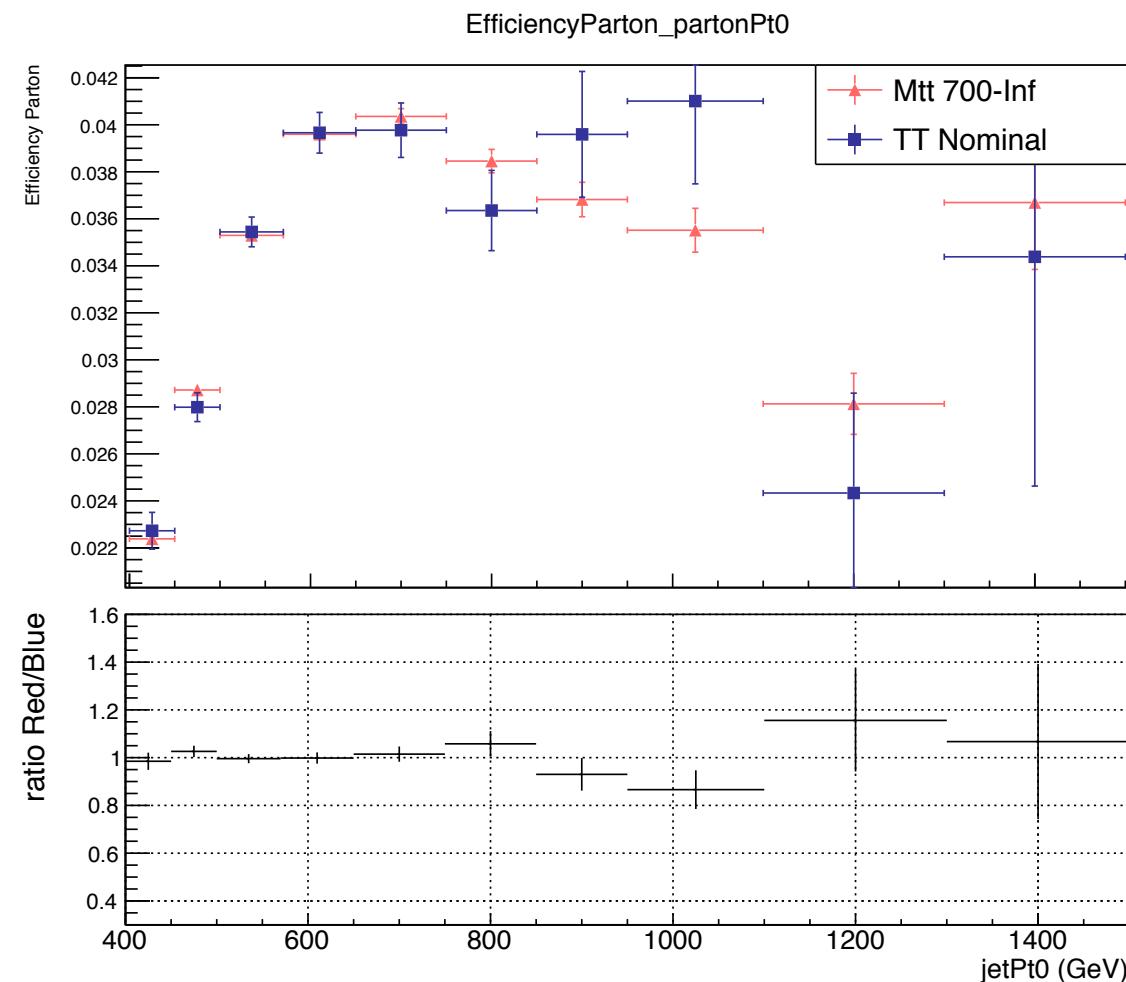
Slice Parton: Signal_histo_TTSemiLeptonic 2017



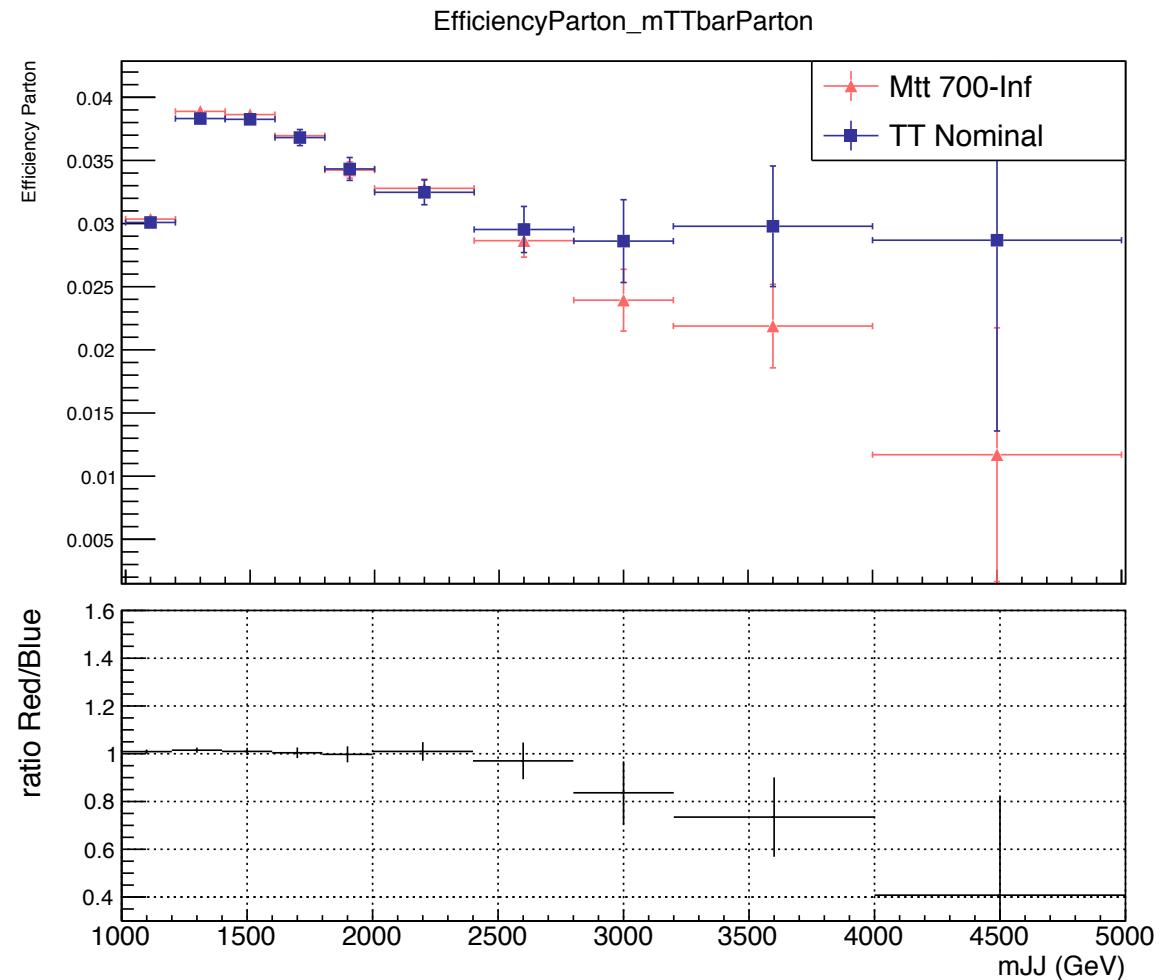
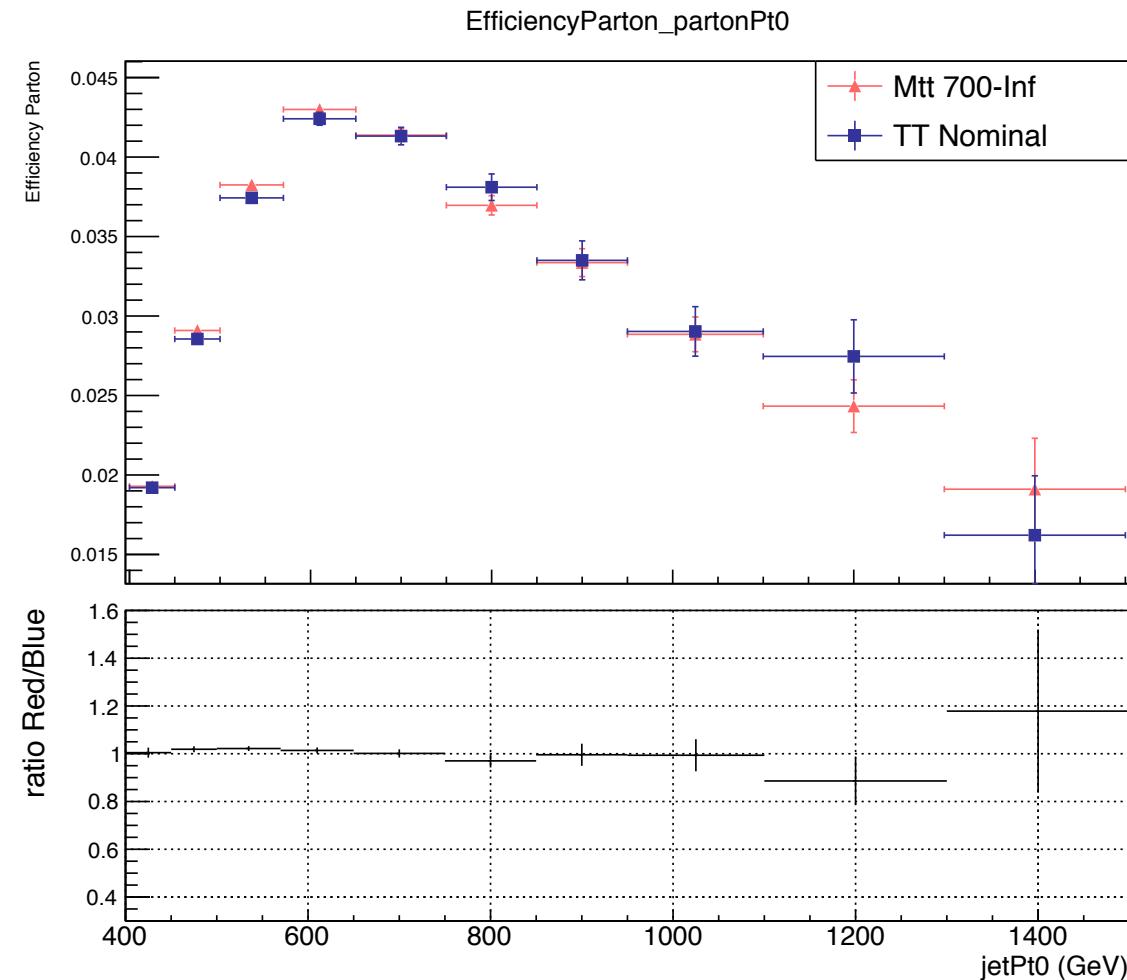
Slice Parton: Signal_histo_TTTo2L2Nu 2017



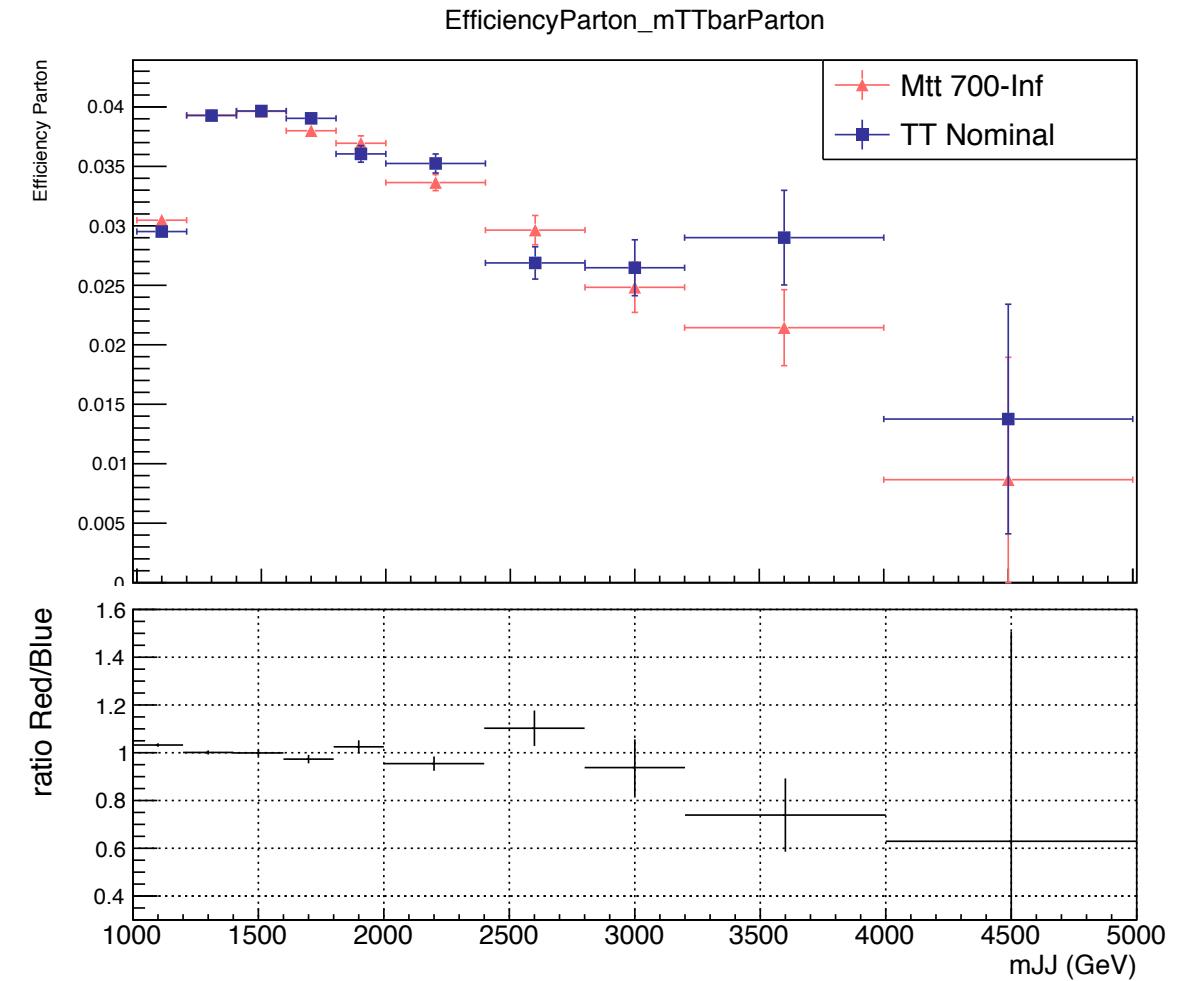
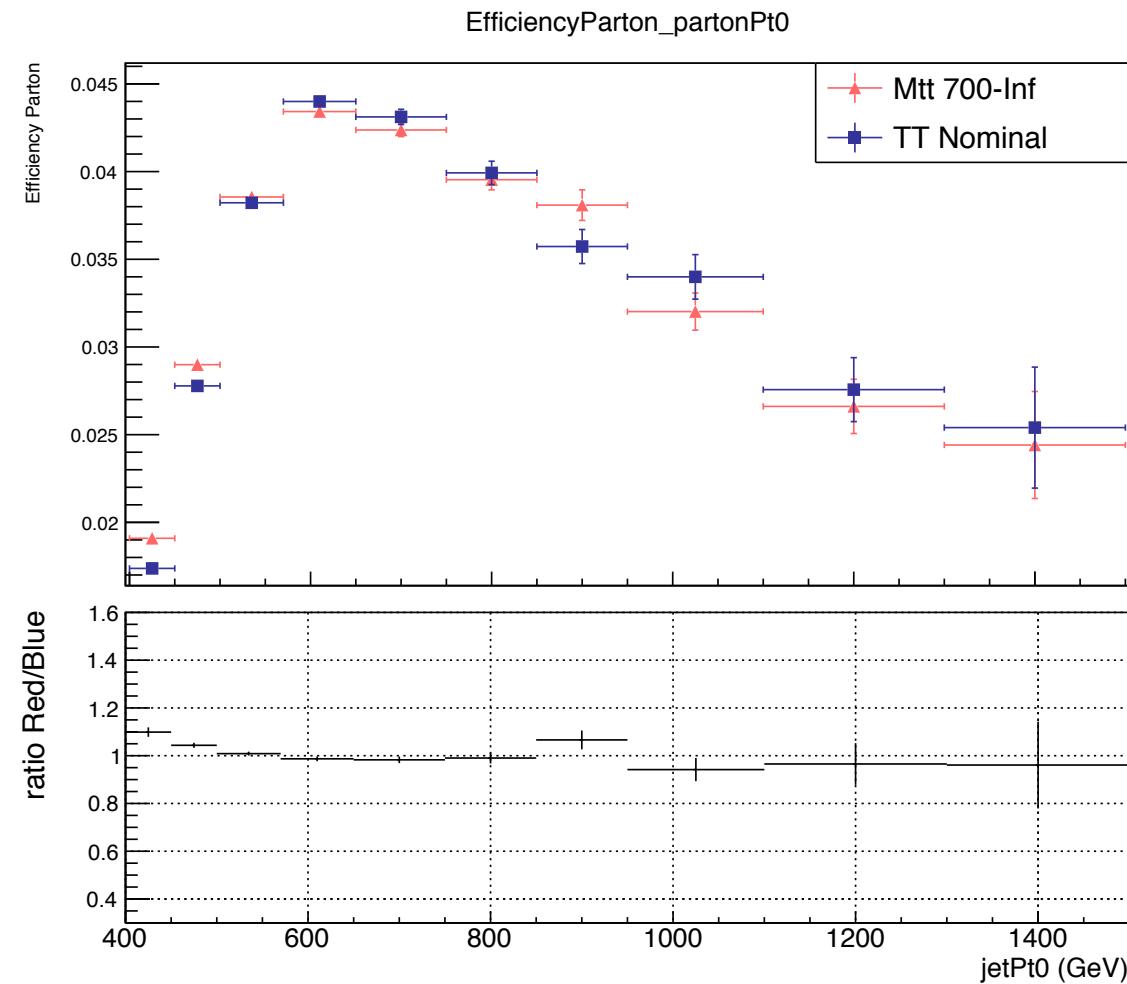
Efficiency from Nominal MC and High Mtt (corrected xsec) 2016



Efficiency from Nominal MC and High Mtt (1000-Inf File only) 2017



Efficiency from Nominal MC and High Mtt (1000-Inf File only) 2018



Detector Control System (DCS)

Show More

Active members of the CMS Central DCS Department. Constant support and development of new tools.

- 1. Development of DB Editor And Navigator. A tool that gives the user the opportunity to create projects that run on production on his/hers local machine.
- 2. Alert Screen
- 3. CMSfwInstallUtils, Configuration Database test. User can check the consistency between the data loaded on the local machine and the data in the database for several configurations. For every missing configuration or inconsistency, the user gets an appropriate message
- 4. CMS Handshake. This tool provides interaction between the CMS experiment and the LHC network.

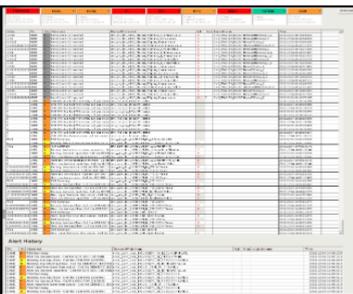


Fig.1 - Alert Screen

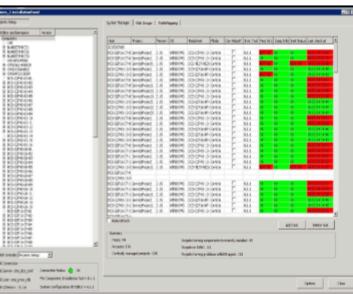


Fig.2 - DB Editor and Navigator

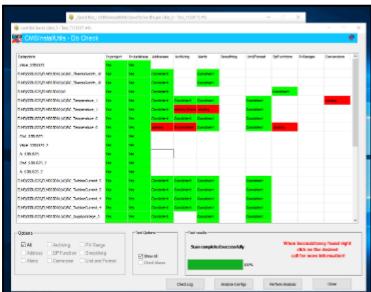


Fig.3 - CMS Installation Utils

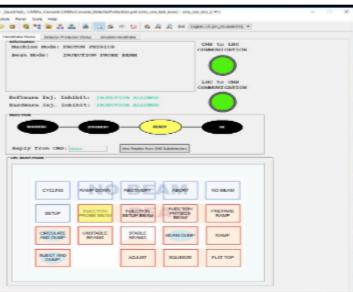
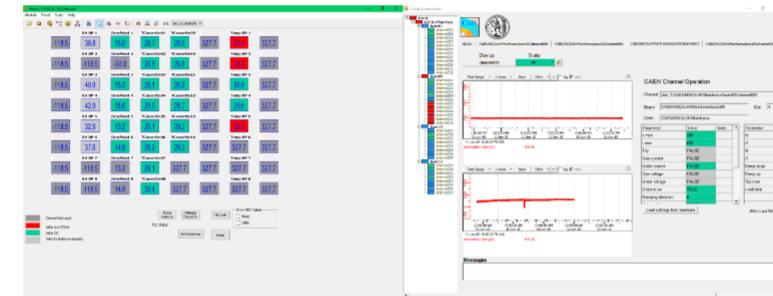


Fig.4 -CMS Handshake

HGCAL Detector Control Systems

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Development and testing of the new Detector Control System Finite State Machine (FSM) for the new detector HGCAL (High Granularity Calorimeter) that will be applied on the CMS detector after the long shutdown. Also support for the High Voltages in the HGCAL test beams as well as environmental monitoring using PLC's. The framework in which the environmental conditions were monitored, was developed by our team.



RD51

Show More

Our group is an active member of the RD51 collaboration

We are providing support at the Test Beams, where new gas detectors are developed. Our group is responsible for building and maintaining the Slow Control System (High Voltages) as well as monitoring the environmental conditions of the laboratory using Arduino and Raspberry Pi.

