

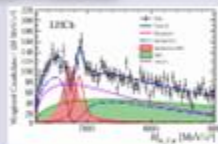
Search for structures near $T_1(TS)/T_2(TS)$ mass threshold

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Introduction

- Discovery of $\Lambda(1520)$ in 1962, provided strong evidence for the existence of hadronic exotic resonances
- Top quark discovery in 1995 is relying on the $t\bar{t}$ cross section
- $\Lambda(1520)$ and $\Lambda(1640)$ are the first exotic resonances observed in the $\Lambda\bar{\Lambda}$ system
- The search for structures near the $T_1(TS)/T_2(TS)$ mass threshold

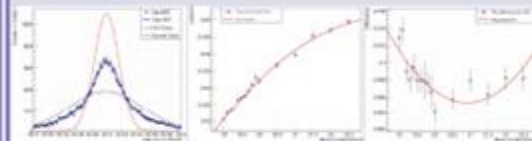


MC

- Monte Carlo (MC) is essential in particle physics

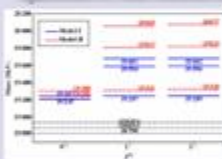
Signal MC (JHUGen)

- Signal MC is essential in particle physics
- $T_1(TS)/T_2(TS)$ mass threshold is a key feature of the signal
- Backgrounds and efficiency distributions are important for signal



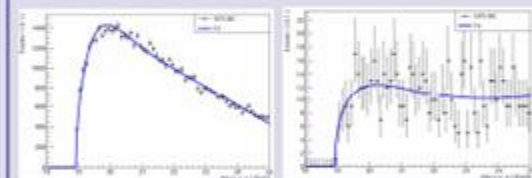
Motivation

- Discovery of $\Lambda(1520)$ in 1962, provided strong evidence for the existence of hadronic exotic resonances
- Top quark discovery in 1995 is relying on the $t\bar{t}$ cross section
- $\Lambda(1520)$ and $\Lambda(1640)$ are the first exotic resonances observed in the $\Lambda\bar{\Lambda}$ system
- The search for structures near the $T_1(TS)/T_2(TS)$ mass threshold



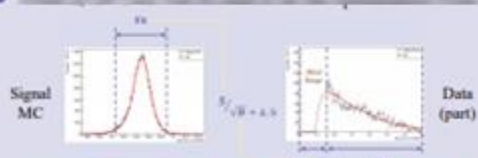
Background MC (Pythia8)

- Background MC is essential in particle physics
- $T_1(TS)/T_2(TS)$ mass threshold is a key feature of the signal
- Backgrounds and efficiency distributions are important for signal



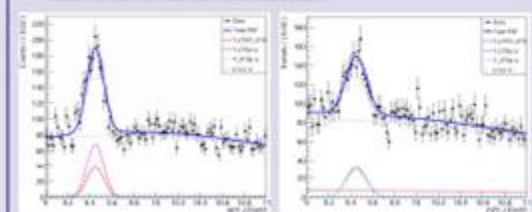
Cut Optimization

- Cut optimization is essential in particle physics
- $T_1(TS)/T_2(TS)$ mass threshold is a key feature of the signal
- Backgrounds and efficiency distributions are important for signal



Data

- Data is essential in particle physics
- $T_1(TS)/T_2(TS)$ mass threshold is a key feature of the signal
- Backgrounds and efficiency distributions are important for signal



Future Plan

- Background modeling
- Cut optimization
- $T_1(TS)/T_2(TS)$ mass threshold
- Backgrounds and efficiency distributions



References: [1] ... [2] ... [3] ...

