Conclusions

Summary and Future Prospects

- FASERCal detector is significant data challenge:

  - This thesis has confronted this challenge: *developing* and *validating* a complete deep learning framework for the comprehensive reconstruction of Nu event

- Future Prospects:

  - **Apply to Real Data Prototype:** Bridge the Sim-to-Real gap and quantify systematic uncertainties.

  - **Enhance Rare Signal Searches:** Develop dedicated fine-tuning strategies to mature the initial NuTau sensitivity.

  - **Advanced Applications:** Optimize the model for low-latency inference for potential use in a real-time data trigger.

Backup