

The Fast Calorimeter Challenge 2022: Final Evaluation & Lessons Learned

Wednesday, November 6, 2024 5:00 PM (30 minutes)

I report the final results of the Fast Calorimeter Challenge 2022: 23 collaborations submitted 59 samples across all 4 datasets. I will show how these rank regarding various metrics judging shower quality, generation time, and other properties. From these results, I present the current, state-of-the-art, Pareto fronts for using deep generative models on high-dimensional datasets in high-energy physics. These results will shape the future of fast simulation in the analysis chain at the experiments. In addition, this dataset allowed us to study the evaluation of deep generative models in general. I will show the correlation between different quality metrics, such as a binary or multiclass classifiers or FPD/KPD scores, and discuss what we can learn from this for the future.

Track

Detector simulation & event generation

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Session Classification: Mixed contributions