

Project: **“Pinning down the origin of collective effects in small collision systems”**

- Project funded by Knut and Alice Wallenberg Foundation for 5+1 year (summer 18 to summer 24)
- PIs: Peter Christiansen and Leif Lönnblad
- Main idea: confront non-QGP (Angantyr) and QGP descriptions of the same phenomena



# The 3 pillars of CLASH

- Development of new theoretical models and generators (mainly theory)
- Search for jet quenching in small systems (mainly experiment)
  - Not so much activity
- Search for the best observables to differentiate between models for QGP-like effects in small systems
  - The main area where we have CLASHed



# How to make progress?

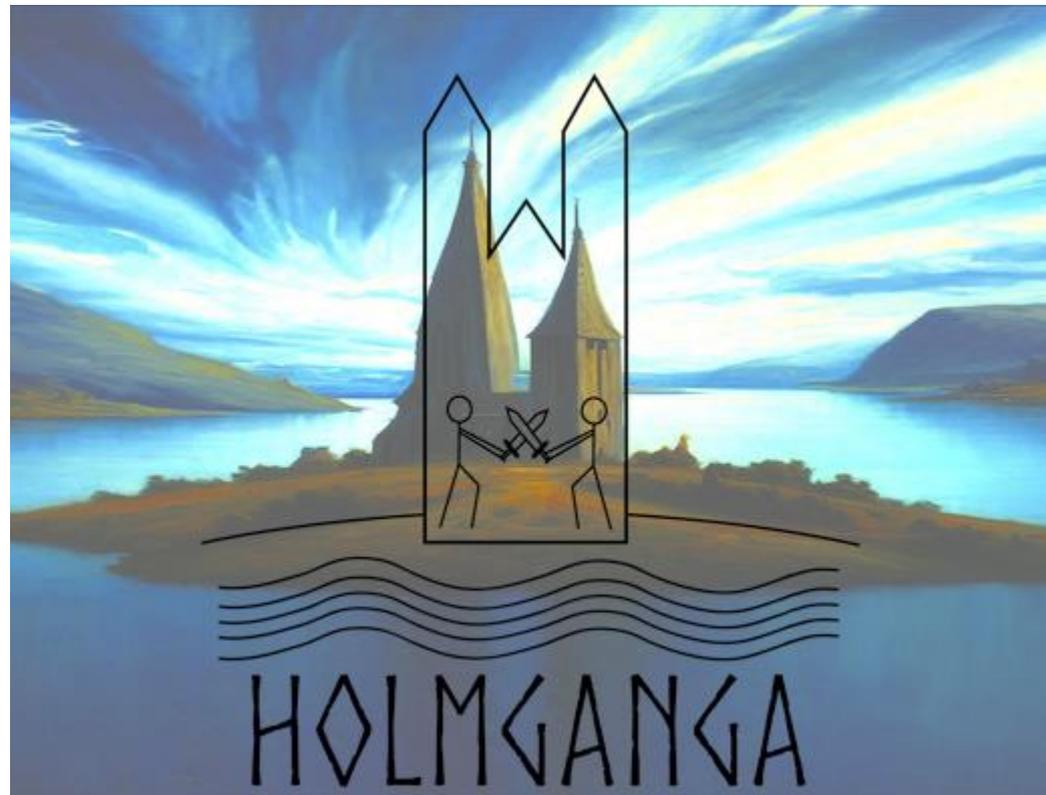
- **Confronting two descriptions gives fresh perspectives that can lead to new ideas!**
  - CLASH workshop (2019) write up: [EPJ A 56 \(2020\) 11, 288](#)
- Try to identify **unique signatures** of the two alternative paradigms
- Find **new observables** that can provide new insights or test the unique signatures

# Some ideas that emerged from the first meeting

- Big difference in paradigms are that quarks and hadrons are produced together in traditional pp models (no deconfinement)
  - Study Quantum Number balance functions
- $\phi$ : in Pythia is double strange  $\rightarrow$  more easy to produce one extra if you already produce one
  - Alternatively: can we look for correlations with other strange particles, e.g.,  $\phi$ -K



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- Hope for this meeting: take time to discuss