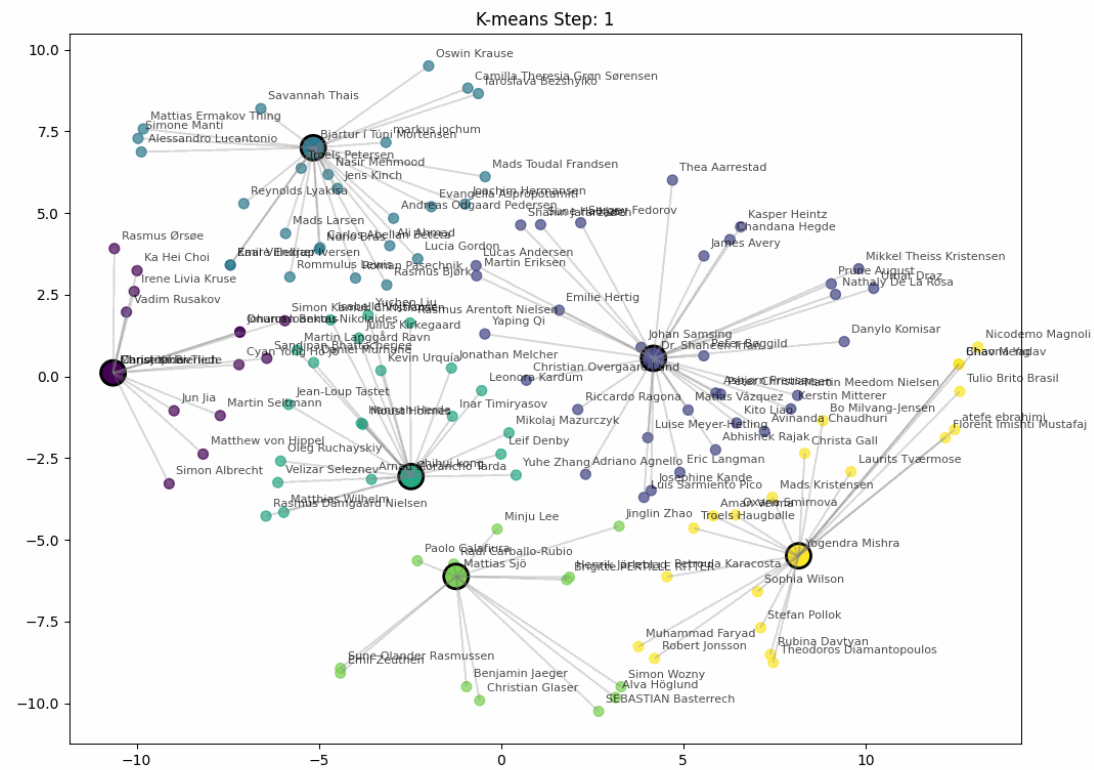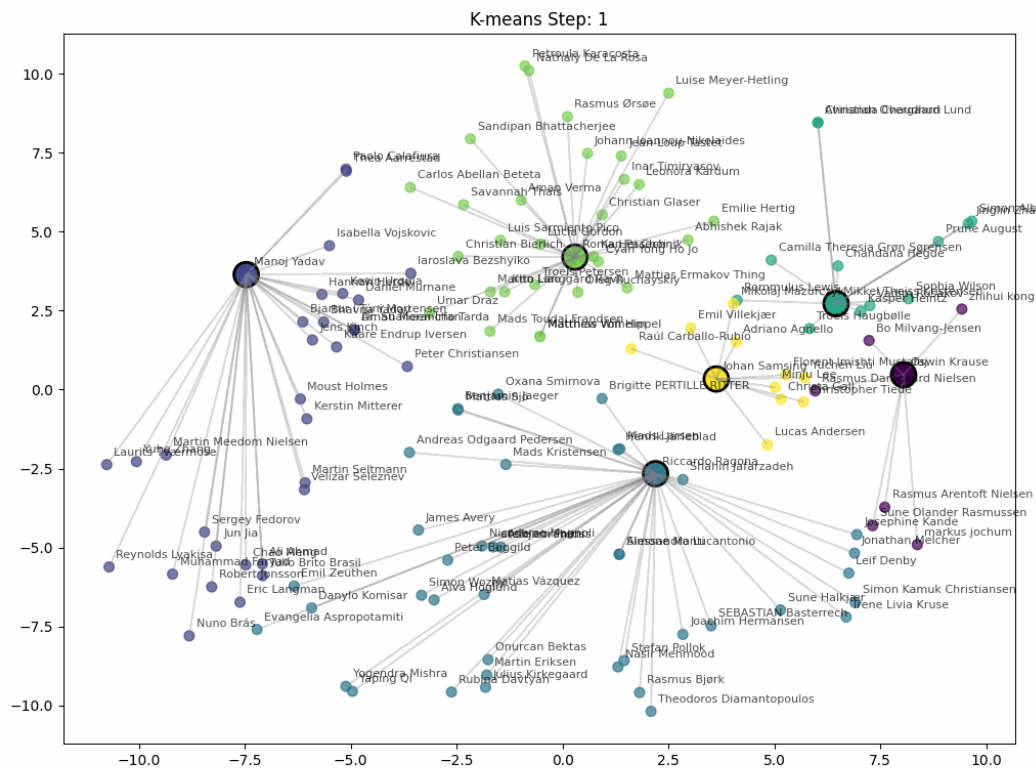# Breakout Session

The Plan

- We will break into small groups, according to your own preferences
- Each group has its own room
- There will be two rounds of discussion, each 25 minutes
- The first round will be clustered by physics domain topic
- The second round will be clustered by machine learning technique
- We will provide some prompt questions – feel free to use or not use them!
- Please self-appoint a notetaker: Your task is to make a single slide capturing the discussion, and send us the PDF at the end of the round: daniel.murnane@nbi.ku.dk
- We will reconvene and run through the slides all together!

Discussion Prompts

- Challenges/opportunities in training and education

- Challenges/opportunities in infrastructure

- Challenges/opportunities in funding

- Challenges/opportunities in collaboration and networking

- Challenges/opportunities in job market

- Challenges/opportunities in data sharing

- What would the ideal landscape look like for your domain/technique in Denmark in 5/10/20 years?

- What are the "Grand Challenges" in your domain/technique?

- What would you like to come out of this workshop?

Physics Topics + Rooms

1. Astronomy, galaxies, stellar, planets (**room 101**)
2. Climate, geo, water, solar, fluid, energy (**room 102**)
3. Collider particle (**room 105**)
4. Astro particle (**room 106**)
5. Quantum, atomic, nuclear (**room 107**)
6. Solid state, condensed, bio, materials (**room 110**)

ML Topics + Rooms

1. GNNs, CNNs, Transformers (**room 101**)
2. Foundation models, anomaly detection, self-supervised ML (**room 102**)
3. Physics-informed ML, quantum ML (**room 105**)
4. Clustering, unsupervised ML, dimensional reduction (**room 106**)
5. Reinforcement learning, time series (**room 107**)
6. Explainability, reliability, causality, symbolic (**room 110**)

Possible Outcomes

- White paper summary of all discussion
- More meeting opportunities (simple meetups, journal clubs, seminars)
- Proceedings for next year
- Some formal integration with DFS
- Group application(s) for funding (e.g. Carlsberg infrastructure)
- Mentorship activities
- Ongoing access to HAMLET meeting app
- Partnerships with industry
- Partnerships with universities and institutes (e.g. DDSA, P1)