

Pillar III important points for the Roadmap

- Very complementary to I and II: we 'observe' the Universe and interpret what we see. In this way we want to learn about fundamental physics. Modelling/theory is very important. Redundancy is necessary.
- This is the only pillar which is sensitive to gravitational interaction.
- Synergies with astrophysics are very important: we need to understand astrophysical objects like e.g. cosmic accelerators in order to interpret what we see.
- Sometimes we happen to sit between two chairs...

Pillar III conclusions

Our main physics questions are:

- Detecting DM via non-gravitational interactions (direct/indirect)
- Multi-messenger γ -rays, X-rays, cosmic rays, neutrinos gravitational waves are needed for a full picture, especially also to understand cosmic accelerators.
- Study Dark Energy: Cosmological constant? Scalar field? Modified gravity?
- Gravitational waves are very important for multi-messenger astrophysics and for cosmology. In CH we are missing an experimental program.