INFRASTRUCTURE QUANTUM UNIVERSE

CLUSTER OF EXCELLENCE

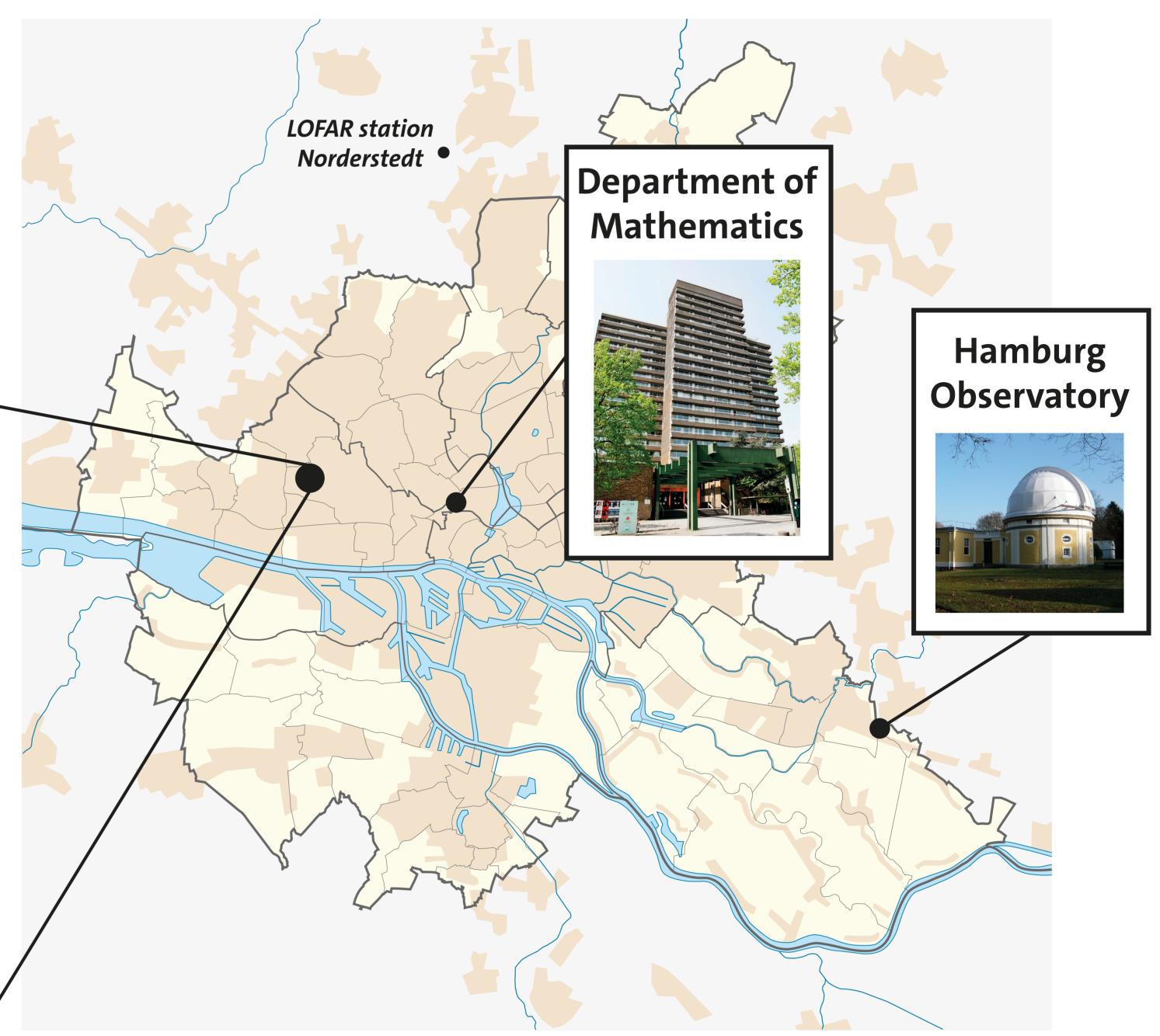
SUPPORT FROM UNIVERSITÄT HAMBURG, DESY, AND THE FEDERAL STATE OF HAMBURG

- New strategic appointments
- Investments into infrastructure in 2018
- Investments into new instrumentation
- Additional staff



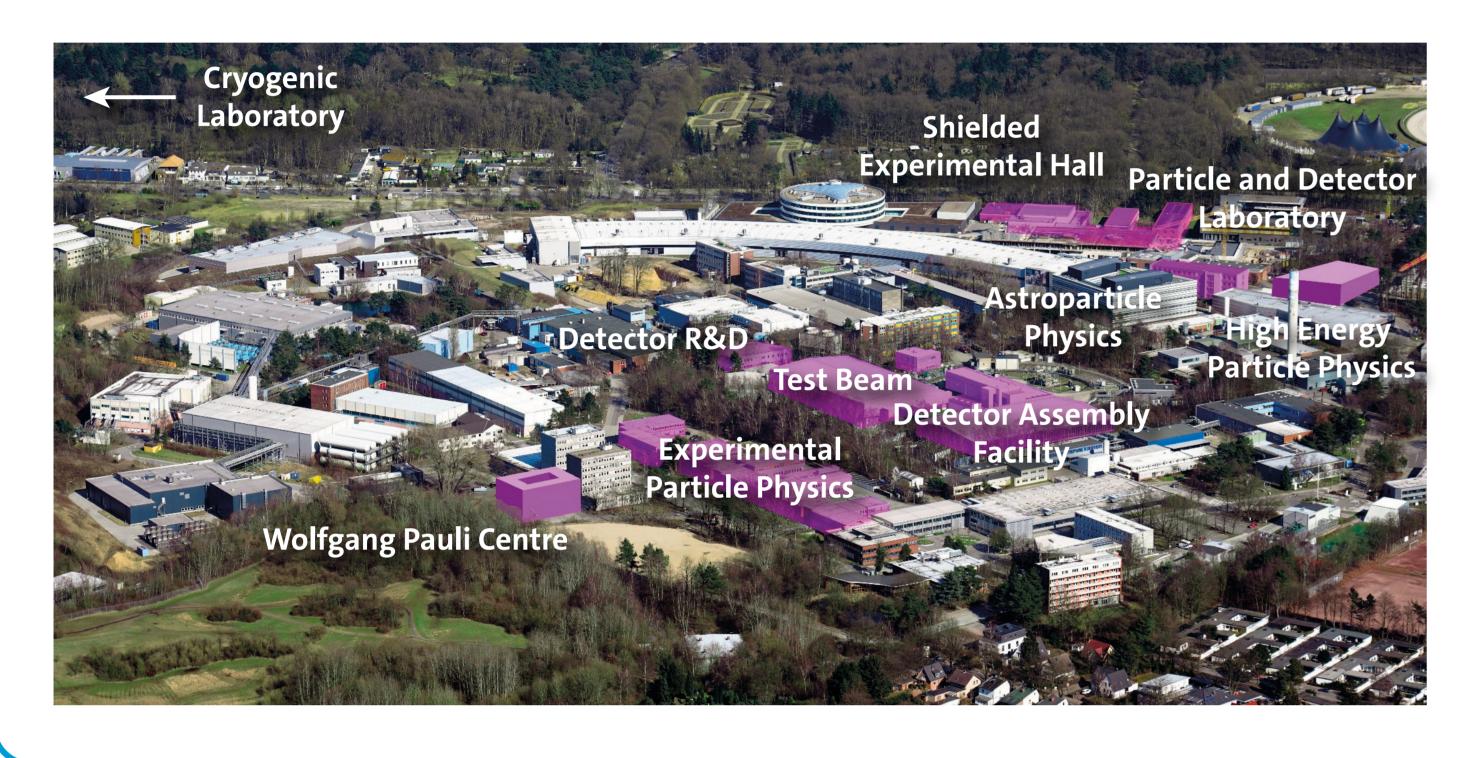


Total support for Quantum Universe research: 25.1 million €

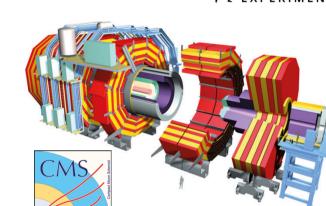


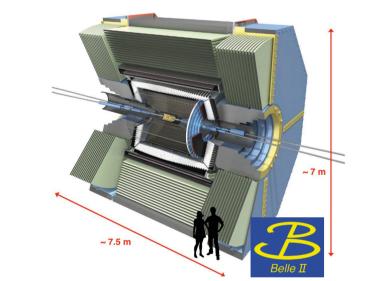
QUANTUM UNIVERSE IN HAMBURG

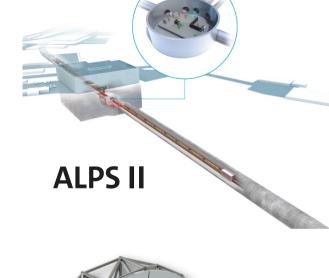
INTERNATIONAL SCIENCE CAMPUS HAMBURG-BAHRENFELD

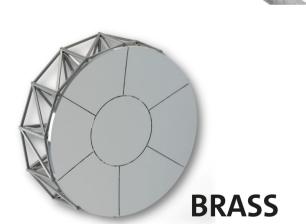


ATLAS









Ongoing and planned experiments/observations

Collider Physics

- 1. ATLAS and CMS at the LHC, upgrade
- 2. BELLE-II

Axion/WISP experiments (local in Hamburg)

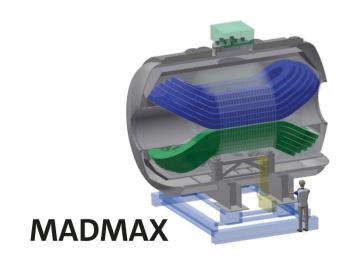
- 3. ALPS II
- 4. BRASS, MADMAX, babylAXO

Astrophysics

- 5. LOFAR, Taiga
- 6. CTA, 4MOST, eRosita

Gravitational Waves

- 7. Advanced LIGO (aLIGO)
- 8. R&D projects for the Einstein Telescope







EXPERIMENTAL ACTIVITIES IN QUANTUM UNIVERSE

AXIONS

MELAHON



DARK MATTER

MASS

AND

GRAVITY

GRAVITATIONAL WAVES

2020



TIMELINES OF EXPERIMENTS

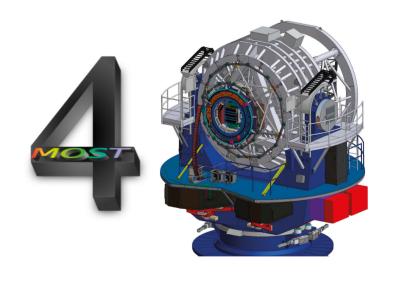
2025

2030









2035

INTERNATIONAL COLLABORATIONS



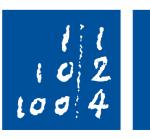




European Southern Observatory





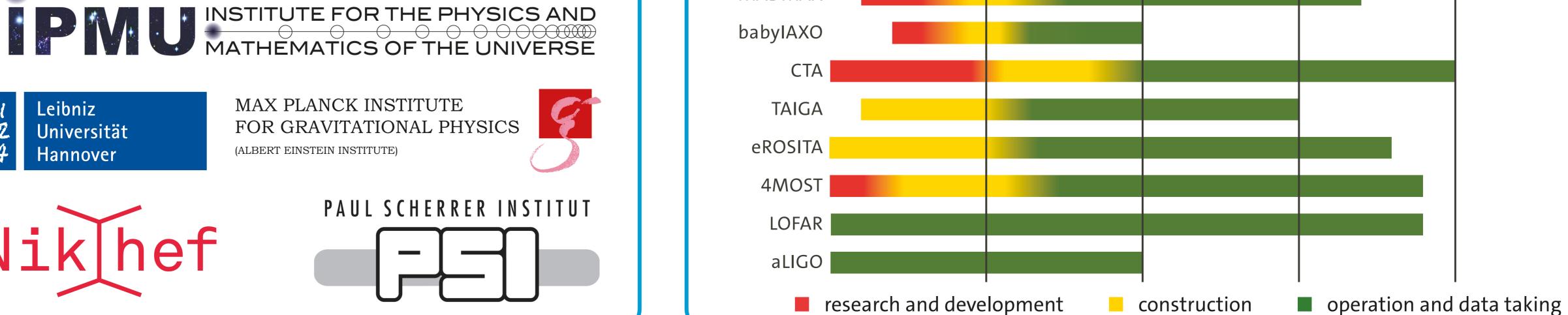




K A V L I







2015

LHC

upgrade

ALPS II

BRASS

MADMAX



Max-Planck-Institut für Physik

(Werner-Heisenberg-Institut

