

# Positioning HEP in the Helmholtz Programme Matter

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# The Quest of HEP & AP

- Origin of the Universe and its evolution
- Fundamental symmetries and forces
- Origin of mass
- The nature of dark matter (and dark energy)
- CP violation and the matter dominance

# HEP

- Helmholtz HEP programme and European Strategy for Particle Physics are tightly interwoven
- DESY is the national laboratory for Particle Physics
- DESY provides support for German universities and acts as a link to the international HEP community
- DESY's infrastructure and expertise are fundamental to future large projects of Particle Physics. Synergies arise from close interaction with UHH (PIER) and HU Berlin and U Potsdam

# The 4 Research Pillars of Matter

Topic	Tools	Scale
Materials	PETRA, <b>XFEL</b> , ESS, ...	$10^0 \dots 10^3$ eV
Universe, Symmetries and Forces	<b>LHC</b> and LC	$10^{12}$ eV
Hadrons and Nuclei, <b>Star matter</b>	<b>FAIR</b> , ALICE, ...	$10^6 \dots 10^9$ eV
Technologies	Detectors, accelerators, computing	€

= MUST