

Precision investigations of trilinear Higgs couplings and applications for collider processes

After the discovery at the CERN Large Hadron Collider of a Higgs boson with a mass of about 125 GeV, the structure of the Higgs sector and the actual form of the Higgs potential still remain to a large extent uncharted. In this project, we will explore extended Higgs sectors, which could for instance be suitable for providing a possible candidate for dark matter and for explaining the matter-antimatter asymmetry of the Universe. Predictions for trilinear Higgs couplings and their phenomenological applications, in particular in the context of processes at current and future colliders, will be investigated.

Group

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Project Category

B4. Theory of Elementary Particles

Special Qualifications

Quantum Mechanics I+II, Particle Physics basics, ideally a Quantum Field Theory course

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