

Exploring Higgs physics beyond the Standard Model (3 projects)

project sketches:

(1)

After the discovery 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 probe 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 Higgs couplings and their phenomenological applications will be investigated.

(2)

After the discovery 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 probe 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 precision observables and their phenomenological applications will be investigated.

(3)

After the discovery 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 probe 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 signatures at present and future colliders and their phenomenological applications will be investigated.

Field

B5: Theory of Elementary Particles

DESY Place

Hamburg

DESY Division

FH

DESY Group

Theory

Special Qualifications:

Primary authors: WEIGLEIN, Georg (T (Phenomenology)); BRAATHEN, Johannes (T (Phenomenology)); GABEL-MANN, Martin (T (Phenomenology)); LOESCHNER, Maximilian (T (Phenomenology)); STYLIANOU, Panagiotis (T (Phenomenology))