The Large Hadron Collider (LHC) at the European Organisation for Nuclear Research (CERN) promises a major step forward in the understanding of the fundamental nature of matter. Four large experiments at the LHC are complementary addressing the question of the origin of our Universe by searching for the so-called New Physics.

The "Standard Model" (SM), the theory that reflects our understanding of elementary particles and their fundamental interactions, has been extensively studied and experimentally verified to an unprecedented precision over the past decades. Despite its impressive success, there are many unanswered questions; which suggest that
there is a more fundamental theory which incorporates New Physics. It is expected that at the LHC either New Physics beyond the SM will be discovered or excluded up to a very high energies, thus our view of the fundamental structure of the Universe will be challenged and probably revolutionized in the coming years. The ATLAS experiment is dedicated to address the key issue of ElectroWeak Symmetry Breaking (EWSB) and linked to this the search for the Higgs boson as well as the search for Physics beyond the Standard Model. The analysis proposed here is measurement and searches for New Physics in diboson processes. The New Physics effects in the diboson sector will be observed either directly, as in the case of new particle production decaying to diboson, e.g., new vector bosons and extra-dimensions, or indirectly through deviations from the SM predictions of observable such as cross sections and asymmetries. Triple gauge boson self-coupling (TGC) are extremely sensitive to New Physics, thus a very powerful tool for indirect searches for New Physics contributions through loop corrections.

At the LHC, the unprecedented center-of-mass energy and luminosity will allow to measure the TGC with a high accuracy and to probe regions that are inaccessible at previous experiments even with modest amounts of data.

Wissenschaftliches Gebiet
/Naturwissenschaften/Naturwissenschaften/theoretische Physik/Partikel

Programm/Programme

Thema/Themen

Aufforderung zur Vorschlagseinreichung

ERC-2011-StG_20101014

Finanzierungsplan

ERC-SG - ERC Starting Grant

Gastgebende Einrichtung

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

Adresse  Aktivitätstyp  EU-Beitrag
Research Organisations  € 904 190
Begünstigte (1)

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

Adresse
Rue Leblanc 25
75015 Paris 15

Website

Hauptforscher
Samira Hassani (Dr.)

Kontakt Verwaltung
Nathalie Judas (Ms.)

EU-Beitrag
€ 904 190

Aktivitätstyp
Research Organisations

Letzte Aktualisierung: 21 Juni 2017
Aktenzeichen: 101464

Permalink: https://cordis.europa.eu/project/id/279170/de

© European Union, 2021