Julius-Maximilians-
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INSTITUT FÜR THEORETISCHE PHYSIK & ASTROPHYSIK
THEORETISCHE PHYSIK II
CAMPUS HUBLAND NORD

(0925020) **O N L I N E** **Seminar zur Elementarteilchentheorie**

Talk: Thursday, **23-April-2020, 1:15 pm**

Dr. Thomas Flacke

Institute for Basic Science (IBS), Daejeon, Korea

Underlying models with a composite Higgs and their many collider signatures

Abstract

Composite Higgs models attempt to address the hierarchy problem and to provide a dynamical explanation for electroweak symmetry breaking. In the first part of this talk, we survey a class of underlying models with a confining BSM gauge group and BSM fermions which are the constituents of a composite Higgs multiplet, as well as of BSM baryons (vector-like quarks) which are relevant to generate a mass term for the standard model quarks. Beyond the Higgs, the models predict further scalar resonances below the TeV scale as well as vector-like quarks at the TeV or multi-TeV scale. In the second part of the talk, we discuss the collider phenomenology of the light composite scalars, vector-like quarks, and their interplay. We determine constraints from current LHC searches and outline opportunities for searches at the LHC and future colliders.