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Constraining composite Higgs models with direct and indirect searches (15' + 5')

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As a solution to the hierarchy problem the idea of a composite Higgs boson is very appealing. We present comprehensive numerical analyses of realistic four-dimensional models
with the Higgs as a composite pseudo-Nambu-Goldstone boson and partial compositeness. These models feature a calculable Higgs potential allowing to calculate the Higgs mass and its vacuum expectation value. Furthermore, we consider protective custodial and flavour symmetries to reduce electroweak fine-tuning. In these kind of models there is usually a lot of room for model building. We investigate different patterns of symmetry breaking und different representations under these symmetries, all of which are of great phenomenological interest.
We employ a novel numerical technique that allows us for the first time to study constraints from radiative electroweak symmetry breaking, Higgs physics, electroweak precision tests, flavour physics, and direct LHC bounds on fermion and vector boson resonances in a single framework.
With these results we will comment on the present phenomenological status of these kind of models and their ability to explain experimental anomalies.

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