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The Next Generation

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Summary

Results on non-sequential Standard Model (SM) -like matter generations, published in
[1], will be reviewed. We consider two realistic models for dynamical electroweak
symmetry breaking: the minimal (MWT) [2] and next to minimal walking technicolor
(NMWT) [3] model. New SM-like matter arises due to cancellation of the global and
gauge anomalies associated with the strongly interacting sector responsible for the
electroweak symmetry breaking. This leads to concrete models featuring
non-sequential generations of SM-like matter. We constrain the parameter space of
these models by analysing the electroweak precision parameters S, T and U, and find
the models viable in the light of the existing electroweak data. The relevant
experimental signals to look for at the LHC are outlined.

[1] O. Antipin, M. Heikinheimo and K. Tuominen, arXiv:1002.1872 [hep-ph].
[2] F. Sannino and K. Tuominen, arXiv:hep-ph/0405209.
[3] A. Belyaev, R. Foadi, M. T. Frandsen, M. Jarvinen, F. Sannino and A. Pukhov, arXiv:0809.0793 [hep-ph].

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