

<u>Papers</u>	<u>2004</u>	<u>2006</u>	<u>2008</u>
Supersymmetry	83	43	33
Axions	12	11	18
Higgs	19	23	12
Compositeness	7	6	6
Extra dimens	16	11	11
Other searches	8	11	4

  

<u>Measurements</u>	<u>2004</u>	<u>2006</u>	<u>2008</u>
Supersymmetry	157	73	50
Axions	15	13	18
Higgs	25	30	15
Compositeness	21	12	15
Extra dimensions	28	15	12
Other searches	15	23	10

## AXIONS

Written in August 2007 by C. Hagmann (LLNL), H. Murayama (UC Berkeley), G.G. Raffelt (MPI Physics), L.J. Rosenberg (U. of Washington), and K. van Bibber (LLNL).

*Introduction:* In this section, we list mass and coupling-strength limits for very light neutral scalar or pseudoscalar bosons that couple weakly to normal matter and radiation.

## EXTRA DIMENSIONS

Updated Sept. 2007 by G.F. Giudice (CERN) and J.D. Wells (MCTP/Michigan).

### *I Introduction*

The idea of using extra spatial dimensions to unify different forces started in 1914 with Nordstöm, who proposed a 5-dimensional vector theory to simultaneously describe electromagnetism and a scalar version of gravity. After the in-

## SEARCHES FOR QUARK AND LEPTON COMPOSITENESS

Revised 2001 by K. Hagiwara (KEK), and K. Hikasa and M. Tanabashi (Tohoku University).

If quarks and leptons are made of constituents, then at the scale of constituent binding energies, there should appear new interactions among quarks and leptons. At energies much below the compositeness scale ( $\Lambda$ ) these interactions are suppressed

## DYNAMICAL ELECTROWEAK SYMMETRY BREAKING

Revised August 2007 by R.S. Chivukula (Michigan State University), M. Narain (Brown University), and J. Womersley (STFC, Rutherford Appleton Laboratory).

In theories of dynamical electroweak symmetry breaking, the electroweak interactions are broken to electromagnetism

## HIGGS BOSONS: THEORY AND SEARCHES

Written November 2007 by G. Bernardi (LPNHE, CNRS/IN2P3, U. of Paris VI & VII), M. Carena (FNAL), and T. Junk (FNAL).

### I. Introduction

Understanding the mechanism that breaks electroweak symmetry and generates the mass of all known elementary particles is one of the most fundamental problems in particle physics.

## SUPERSYMMETRY, PART II (EXPERIMENT)

Written August, 2007 by J.-F. Grivaz (LAL - Orsay)

*II.1. Introduction:* Low energy supersymmetry (SUSY) is probably the most extensively studied among the theories beyond the standard model (SM). Reasons are its success in solving some of the deficiencies of the SM, such as the stabi-