

FIELDS and PARTICLES

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Symmetries: Global and Local symmetries. Spontaneous symmetry breaking. Goldstone bosons.

Higgs mechanism.

Electroweak Theory.

Topological Defects: Domain walls, cosmic strings, magnetic monopoles.

Early Universe: Overview of the thermal history of the universe. Early universe thermodynamics.

Brief introduction to a selection of other topics that include:

QCD.

Supersymmetry.

Dark Matter.

Dark Energy.

Inflation.