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## Vacuum alignment and lattice artifacts

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When a subgroup of the flavor symmetry group of a gauge theory is weakly coupled to additional gauge fields, the vacuum tends to align such that the gauged subgroup is unbroken. At the same time, the lattice discretization typically breaks the flavor symmetry explicitly, and can give rise to new lattice-artifact phases with spontaneously broken symmetries. We discuss the interplay of these two phenomena, using chiral lagrangian techniques. Our main example is two-flavor Wilson QCD coupled to electromagnetism. We will briefly touch on theories with staggered fermions and composite Higgs models as well.

**Primary author:** GOLTERMAN, Maarten (San Francisco State University)

**Co-author:** SHAMIR, Yigal (Tel-Aviv University)

**Presenter:** GOLTERMAN, Maarten (San Francisco State University)

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