

# Chiral gauge theories, generalized anomalies, dynamical symmetry breaking, and Natural Anomaly Matching

*Friday, January 24, 2025 9:00 AM (40 minutes)*

I will discuss the strong-interaction dynamics of tensorial chiral gauge theories in four dimensions, extending previous work on other chiral gauge theories such as the Bars-Yankielowicz or Georgi-Glashow models, based on the consideration of the generalized symmetries and mixed anomalies. The stricter 't Hooft anomaly matching conditions for these new anomalies strongly suggests the systems to go through dynamical colour-gauge symmetry (and flavor symmetry) breaking, caused by certain bifermion condensate, against the hypothesis of confinement, with or without (gauge-invariant multifermion) condensates. The Natural Anomaly Matching mechanism ensures that the conventional as well as new generalized anomalies, with respect to the symmetries which are not spontaneously broken, are fully UV-IR matched by the massless fermions in the low-energy effective theory.

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