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The gluino condensate of large- N SUSY Yang–Mills

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We present the first lattice determination of the SUSY $SU(N)$ Yang–Mills gluino condensate at large N . We exploit large- N twisted volume reduction, and present two determinations based on the Banks–Casher relation and on a Gell-Mann–Oakes–Renner-like formula, both giving perfectly compatible results. By expressing the lattice results in the Novikov–Shifman–Vainshtein–Zakharov (NSVZ) scheme, we are able for the first time to compare lattice and analytical computations, resolving a 40-year-long debate about the actual value and N -dependence of the gluino condensate.

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