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Latest results from lattice $N=4$ supersymmetric Yang–Mills

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I will present results from numerical studies of maximally supersymmetric Yang–Mills theory, focusing on the scaling dimension of the Konishi operator. Working with a lattice formulation that exactly preserves one supersymmetry at non-zero lattice spacing, we employ an improved action developed in 2015 that dramatically reduces lattice artifacts. Using this new improved action we are exploring a range of 't;Hooft couplings for two-, three- and four-color gauge theories, to bridge the perturbative regime and the onset of strong-coupling AdS/CFT duality in the large- N limit. Among the various quantities we are investigating the Konishi operator is particularly significant as the simplest conformal operator with a non-trivial anomalous dimension.

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