

Abstract Submitted  
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**Two-dimensional super Yang-Mills theory investigated with improved resolution** UWE TRITTMANN, Otterbein College — In earlier work,  $N=(1,1)$  super Yang–Mills theory in two dimensions was found to have several interesting properties, though these properties could not be investigated in any detail. In this paper we analyze two of these properties. First, we investigate the spectrum of the theory. We calculate the masses of the low-lying states using the supersymmetric discrete light-cone (SDLCQ) approximation and obtain their continuum values. The spectrum exhibits an interesting distribution of masses, which we discuss along with a toy model for this pattern. We also discuss how the average number of partons grows in the bound states. Second, we determine the number of fermions and bosons in the  $N=(1,1)$  and  $N=(2,2)$  theories in each symmetry sector as a function of the resolution. Our finding that the numbers of fermions and bosons in each sector are the same is part of the answer to the question of why the SDLCQ approximation exactly preserves supersymmetry.

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