

Confinement remains one of the most interesting and challenging nonperturbative phenomena in non-Abelian gauge theories. Recent semiclassical (for $SU(2)$) and lattice (for QCD) studies have suggested that confinement arises from interactions of statistical ensembles of instanton-dyons with the Polyakov loop. We have extended the study of a semiclassical ensemble of dyons to the $SU(3)$ Yang-Mills theory. In this talk I will show that we find that such interactions generate the expected first-order deconfinement phase transition. The properties of the ensemble, including correlations and topological susceptibility, were studied over a range of temperatures above and below T_c . Additionally, the dyon ensemble was studied in the Yang-Mills theory containing an extra trace-deformation term. It will be shown that such a term can cause the theory to remain confined at high temperatures. Finally, I will discuss some preliminary results for chiral symmetry breaking in the theory with dynamical quarks.