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# Supersymmetry and neutral bions: hints about deconfinement?

*Monday 8 September 2014 17:00 (30 minutes)*

I will review the conjecture that the thermal deconfinement transition in pure Yang-Mills theory is continuously connected to a quantum phase transition in softly-broken  $N=1$  supersymmetric Yang-Mills theory on  $R^3 \times S^1$ . The latter is driven by a competition between various exotic “topological” molecules, and, since it occurs in a calculable weak-coupling regime, a great deal can be learned about its properties. I will present evidence, from past and ongoing work, in favor of the continuity conjecture. I will also discuss possible directions for future study and speculations on the implications for the pure Yang-Mills deconfinement transition.

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