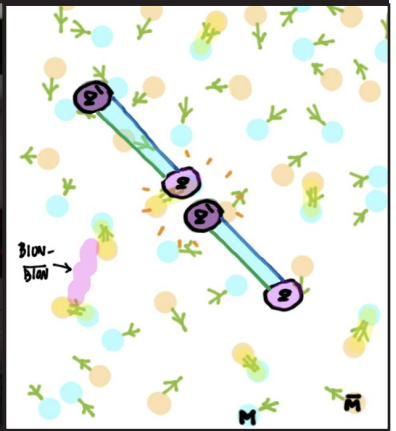


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New Perspectives on Quark Confinement

Department of Physics Colloquium



The confinement of quarks inside protons and neutrons is thought to follow from the theory of the strong force, quantum chromodynamics (QCD). By now very convincing numerical evidence for this has been found by computer simulations of QCD, but an actual derivation of confinement using analytical techniques has resisted all attempts to date. This talk will review the concepts and problems involved in trying to explain confinement analytically, and will present some recent work that sheds light on when and how confinement arises when QCD and similar theories are given periodic boundary conditions in one spatial direction.