condensed monopoles

Chromoelectric

Flux tube

Doug Messner effect

\[ L/V^2, \frac{V}{T}, V^2 \]

Nambu, 't Hooft, Mandelstam

1970's

\[ \text{Gluons, quarks} \]

Confined

Colors

\[ \text{Gluons, quarks} \]

Nature

Elements of a big picture

W. Shifman

ACD Morcond 2007
Linear Conformal

Analytic Proof of

Einstein, Flux tubes, Tern

massless, then condense
conditions become
under certain
monopoles
Hoot-Polyakov

S(U(2)) color \rightarrow \text{U(1)}

\[ N = 2 \] super-Yang-Mills

\[ N = 2 \] super-Yang-Mills

Seiberg-Witten Breakthrough

1994
Non-Abelian monopoles

Recurrent:

\[ N = 2 \] (8 supersymmetries)

2 flavors

\( a \) parameters: any 5

\( a \) (A. Yung)

\[ \text{Hanany - Tong} \]

\[ \text{Hanany - Tong} \]

\[ \text{Breidenbach} \]

\[ \text{NON-ABELIAN STRINGS} \]

\[ \text{NON-ABELIAN STRINGS} \]

Ever since \( \Rightarrow \) Searches for

\[ \text{Wrong string \_ wrong content} \]

\[ \text{Hanany - Strassler - Zaffaroni} \]

\[ \text{Wrong string, wrong content} \]
What remains to be done:

Features

but none of the qualitative

We lose BPS-saturation (technically

[1] Haount | R Levine | Oum

an issue | we are very far from

confined, non-Abelian monopoles

Non-Abelian flux tubes and

adjoint fields

N = 2 supersymmetry remains. N

picture?

What survives from the previous

CD

1st cousin of

M-mode (N)

Shifman, Vainshtein, Gasiorowicz

recently

N=1 (no susy)

N=0 (y supercharges)

N=1 (h supercharges)