2. Brane in target space

2d (2,2) sigma model w/ target CY

BPS (symmetric)

Boundary condition:

D-branes

A-brane & B-branes

A, B-type boundary condition

Also in (symmetric) 2d A-model / B-model

Example of A-brane:

Higgs submanifold + local system

B-brane: complex submanifold + vector bundle

3. Branes in moduli space of Higgs bundles

Physics realization:

N MS-brane on

Given a brane boundary cond.

We can ask whether it can be

Ad to higher dim.

Sigma model (4,4) symmetry can vary

Special branes (1/2 BPS)

A/B branes preserve 2 supersymmetry

(1/4 BPS)

Examples:

(A, B, A): $\mu_{\mathcal{M}}(\mathcal{N})$ 

$\mathcal{N} =\mathcal{M}_{\mathcal{G}}$ 

$\mathcal{M}_{\mathcal{G}}(\mathcal{G})$ 

A, B-brane preserve 2 supersymmetry

$\mathcal{M}_{\mathcal{G}}(\mathcal{G})$ 

Hitchin equation

$\mathcal{M}_{\mathcal{G}}(\mathcal{G})$

4. Monodromy

MCG (T)

MCG (T)

Same sigma model

Questions:

1. Monodromy for moduli of wild Higgs bundles

2. Application to F-theory