The generalized Seiberg-Witten equations

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Abstract

We show a set of equations which generalizes the Seiberg-Witten equations

1 The Seiberg-Witten equations

The Seiberg-Witten equations are the following ones [F] [M]:

$$\mathcal{D}_A(\psi) = 0$$

$$F_+(A) = -\frac{1}{4}\omega(\psi)$$

2 The generalization of the SW equations

We consider two spinors ψ, ϕ and we define [F]:

$$\omega(\psi,\phi)(X,Y) = <\psi, XY.\phi> + <\phi, XY\psi> + 2 <X,Y> Re(<\psi,\phi>)$$

The generalized Seiberg-Witten equations are the following ones:

$$\mathcal{D}_A(\psi) = \mathcal{D}_A(\phi) = 0$$

and

$$F_+(A) = -\frac{1}{8}\omega(\psi,\phi)$$

If $\psi = \phi$, then we have the Seiberg-Witten equations.

3 The invariants of Seiberg-Witten generalized

We have to prove compacity of the moduli spaces and to define the invariants of Seiberg-Witten over them.

References

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