

## **On a Floer Homology set up for the Seiberg-Witten equations in 4D.**

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### **Abstract:**

The Morse-Bott index of critical points of the Seiberg-Witten functional are finite, some may be irreducible and others, the critical points belong to the jacobian torus  $\mathbb{T}^n$ , are reducible with respect to the Gauge group action. In order to develop a Morse-Bott framework it is necessary to handle the singular nature of the moduli space, since the gauge group action is not free. By blowing-up the singular set, a new functional and pair of equations turns up.