

## Witten Index and Wall Crossing

*Tuesday 12 August 2014 10:30 (1 hour)*

We compute the Witten index of one-dimensional gauged linear sigma models with at least  $N=2$  supersymmetry. In the phase where the gauge group is broken to a finite group, the index is expressed as a certain residue integral. It is subject to a change as the Fayet-Iliopoulos parameter is varied through the phase boundaries. The wall crossing formula is expressed as an integral at infinity of the Coulomb branch. The result is applied to many examples, including quiver quantum mechanics that is relevant for BPS states in  $d=4$   $N=2$  theories.

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