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## Semiholography, conductivity and Ward identities

*Wednesday, 15 April 2015 12:20 (30 minutes)*

In semiholography, a strongly-coupled conformal field theory with a holographic dual is coupled to another theory that is weakly interacting. We show how semiholography is set up in accordance with the Ward identities of the total theory. As an example, we charge fermions in the total theory under a  $U(1)$  gauge field, and compute the total electrical conductivity and Ward identity corresponding to charge conservation. The resulting conductivity can be expressed in vacuum CFT correlators which we compute in the dual holographic spacetime. Most importantly one has to include the 3-point vertex in the curved background for consistency.

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