

Institut Henri Poincaré  
11 rue Pierre et Marie Curie, 75231 Paris cedex 05  
**String Theory in Greater Paris**

**Rencontres Théoriciennes**  
**“Supergravité, théorie des cordes et théorie M”**

*Jeudi 23 Mars 2017, 11:45*

**Sergio Benvenuti**

*SISSA*

**Monopole superpotentials in 2+1 D : dualities and UV completions**

*Gauge theories in three dimensions can admit monopole operators in the potential. Starting from an interacting gauge theory without monopole potential, if the monopole term is relevant, there is an RG flow to the monopole-deformed theory TM. Focusing on  $U(N_c)$  SQCD with  $N_f$  flavors and  $N = 2$  supersymmetry, we show that even when the monopole potential is irrelevant, the monopole-modified theory TM can exist and enjoy Seiberg-like dualities. We provide a renormalizable, three-dimensional, UV completion of TM and discuss its electric-magnetic dual description. As an application, we find the  $N=2$  3D gauge theory corresponding to a system of D3-D5-NS5 branes containing a stack of coincident NS5 branes broken in half by a D5 brane. This Abelian gauge theory is a quiver containing many monopole terms in the superpotential and is mirror-dual of a standard gauge theory.*

**Institut Henri Poincaré, salle 314, 3<sup>ème</sup> étage**

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<http://string.lpthe.jussieu.fr>  
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