“Chiral SU(3) SQCD3 and N=2 mirror symmetry”

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Abstract: Recently a very interesting three-dimensional N=2 supersymmetric theory with SU(3) global symmetry was discussed by several authors. The latter was conjectured to have two dual descriptions, one with explicit supersymmetry and emergent flavor symmetry and the other with explicit flavor symmetry and emergent supersymmetry. We discuss a third description of the model which has both flavor symmetry and supersymmetry manifest. We then investigate models which can be constructed by using this theory as a building block gauging the global symmetry and paying special attention to the global structure of the gauge group. We conjecture several cases of N=2 mirror dualities involving such constructions with the dual being either a simple N=2 Wess-Zumino model or a discrete gauging thereof.