

# Stony Brook University

## The Graduate School

### Doctoral Defense Announcement

#### **Abstract**

Generalized Isometries in Superspace

by

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$N = (2, 2)$  supersymmetric models are of interest for mathematicians and physicists and have been used extensively as a tool for the investigation of Kähler geometry. It is convenient to formulate and manipulate these in superspace which captures their main properties such as their full bihermitian structure. This also led to recent developments in differential geometry where these targets are characterized using structures that interpolate between complex and symplectic geometry and are defined on the sum  $T \oplus T^*$ .

The research work that will be presented here extends the set of known superspace tools for the manipulation of bihermitian / generalized Kähler geometries, namely, the gauging of isometries along directions that mix chiral and twistedchiral or semichiral multiplets. We shall see that the duality proposed by Grisar, Massar, Sevrin and Troost is indeed a T-duality and present the new  $N = (2, 2)$  gauge multiplets and their actions.

Other results that will be presented relate to possible  $N = (4, 4)$  supersymmetry in semichiral models, torsional gauged linear sigma models and sigma models formulation on the sum  $T \oplus T^*$ .

**Date:** Aug. 20, 2010

**Program:** Physics

**Time:** 12:30 pm

**Dissertation advisor:** Martin Roček

**Place:** YITP Common

MATH 6-125