Contribution ID: **621** Type: **Invited Speaker / Conférencier invité**

# Geometrization of N-Extended 1-Dimensional Supersymmetry Algebras

*Tuesday 16 June 2015 08:45 (30 minutes)*

The problem of classifying off-shell representations of the N-extended one-dimensional super Poincare algebra is closely related to the study of a class of decorated graphs known as Adinkras. We show that these combinatorial objects possess a form of emergent supergeometry: Adinkras are equivalent to very special super Riemann surfaces with divisors. The method of proof critically involves Grothendieck's theory of "dessins d'enfants", work of Cimasoni-Reshetikhin expressing spin structures on Riemann surfaces via dimer models, and an observation of Donagi-Witten on parabolic structure from ramified coverings of super Riemann surfaces.

**Author:** DORAN, Charles (University of Alberta)

**Presenter:** DORAN, Charles (University of Alberta)

**Session Classification:** T1-4 Mathematical Physics (DTP) / Physique mathématique (DPT)

**Track Classification:** Theoretical Physics / Physique théorique (DTP-DPT)