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## **Geometrization of N-Extended 1-Dimensional Supersymmetry Algebras**

*Tuesday, June 16, 2015 8:45 AM (30 minutes)*

The problem of classifying off-shell representations of the N-extended one-dimensional super Poincaré 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.

**Primary author:** DORAN, Charles (University of Alberta)

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

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