

# SYMPLECTIC GROUPOIDS FOR CLUSTER MANIFOLDS

ABSTRACT. We prove some things. And we are happy! It seems to work!

## Outline

- (1) Intro to Poisson manifolds, symplectic groupoid and Poisson spray
- (2) Intro to cluster algebra and compatible Poisson structures
- (3) Cluster symplectic groupoid
- (4) Totally positive cluster manifolds (definition of manifolds with corners [check D Joyce], associahedron of type A and generalized associahedron)
- (5) Symplectic topology of the groupoid, and examples