

# About multiplicative structures on Lie groupoids and vortex motion on surfaces

Alejandro Cabrera

## **Abstract**

We shall present some general ideas about the description of multiplicative differential forms on Lie groupoids. In particular, we will discuss one approach to their study which involves considering differential forms on the total space of the underlying Lie algebroid, its relation to a pure infinitesimal characterization and a logarithmic type formula. Finally, we shall comment on how this general ideas can be applied to solve a problem about the motion of a pair of vortices on a Riemann surface as it was insightfully posed to me by J. Koiller.