The intricate relationship between the Mumford system and the Jacobians of singular hyperelliptic curves

Abstract:

The generalized Jacobian $J_{ac \_m(C \_')}$ of a smooth hyperelliptic curve $C'$ associated with a module $m$ is an algebraic group that can be described by using lines bundle of the curve $C'$ or by using a symmetric product of the curve $C'$ provided with a law of composition. This second definition of the Jacobian $J_{ac \_m(C \_')}$ is directly related to the fibres of a Mumford system. To be precise it is a subset of the compactified $J_{ac \_m(C \_')}$ which is related to the fibres. This presentation will help us to demystify the relationship of these two mathematical objects.