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

Abstract:

The generalized Jacobian Jac\_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 Jac\_m(C') is directly related to the fibres of a Mumford system. To be precise it is a subset of the compactified Jac\_m(C') which is related to the fibres. This presentation will help us to demystify the relationship of these two mathematical objects.