

## **Picard 1-motives and motivic cohomology of varieties in characteristic $p$ .**

I will present joint work with L. Barbieri-Viale (Rome I). Given a variety  $V$  in characteristic 0, possibly open and singular, Barbieri-Viale and Srinivas have associated a Picard 1-motive with  $\ell$ -adic, de Rham and Hodge realizations which coincide with the first  $\ell$ -adic, de Rham and Betti cohomology group of  $V$ . I will show how to extend their construction to varieties in any characteristic, using J. de Jong's theory of alterations. I will recall a classical definition of a  $p$ -adic realization of a 1-motive in characteristic  $p$ . I will prove that if  $V$  is a variety in characteristic  $p$ , then the  $p$ -adic realization of the associated Picard 1-motive coincides with a suitable  $p$ -adic cohomology group defined directly on  $V$  as proposed by de Jong.