The geometry of holomorphic and algebraic curves in
complex algebraic varieties
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Grothendieck's packets and sections of Galois into the arithmetic fundamental group

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Abstract

Sections of the Galois group of the base field (in char. 0) into to arithmetic fundamental group of a smooth variety are shown to be equivalence classes of neutral fiber functors of the Tannaka category of finite connections. This allows to understand part of the section conjecture formulated by Grothendieck for such sections on hyperbolic curves defined over a field of finite type over the rational numbers. It also allows to reduce the whole conjecture to the case where the curve is an affine in the projective line. For example over a number field, the whole conjecture for all hyperbolic curves is equivalent to the conjecture on the projective line minus 3 points.

Joint work with Phùng Hô Hai.