

## Zariski–van Kampen Theorems and Conjectures

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The classical Zariski–Van Kampen theorem gives a presentation of  $\pi_1(\mathbb{P}^2 \setminus C)$  for projective plane curve  $C$ . The first part of this talk is devoted to it and some of its generalizations (Libgober, Chéniot–Libgober, Eyrál), using the monodromy variation operators and their relative counterparts. Then will be discussed recent result of C. Eyrál and the author, which generalizes further the case of possibly singular quasi projective variety. It gives as well partial answer to conjecture of Chéniot–Eyrál (2006), attempting to unify Zariski–van Kampen and second Lefschetz theorems.