

# A GALOIS THEORY FOR THE FIELD EXTENSION $K((X))/K$

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Let  $K$  be a field of characteristic 0, which is algebraically closed to radicals. Let  $F = K((X))$  be the valued field of Laurent power series and let  $G = \text{Aut}(F/K)$ . We prove that there is a one-to-one and onto correspondence between the set of all finite subgroups of  $G$  and the set of all coalgebraic subextensions of  $F/K$ . Some other auxiliary results are given.