
Hopf25

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Hopf-Galois structures on parallel extensions

Hopf-Galois theory allows for a Galois-theoretic approach to studying potentially non-Galois field extensions L/K by studying situations in which Hopf algebras act on L/K in some natural way. Given a separable but non-normal field extension L/K of degree n with normal closure E , there may be other degree n sub-extensions L'/K of L/K (we say that L'/K is parallel to L/K) which can be related to L/K in many different ways. It is then an interesting question to ask whether, given an extension L/K admitting a Hopf-Galois structure, can we say anything about the Hopf-Galois structures on all of the extensions L'/K parallel to L/K ? This talk will take a first look at answering this question, approaching the problem from a group-theoretical perspective, outlining some interesting results along the way.