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The Grunwald problem and specialization of families of regular Galois extensions

JOACHIM KÖNIG

Abstract. We investigate specializations of infinite families of regular Galois extensions over number fields. The problem to what extent the local behaviour of specializations of one single regular Galois extension can be prescribed has been investigated by Dèbes and Ghazi in the unramified case, and by Legrand, Neftin and the author in general. Here, we generalize these results and give a partial solution to Grunwald problems using Galois extensions arising as specializations of a family of regular Galois extensions. These are so far the most comprehensive results for groups G over a number field k under the only condition that G occurs regularly as a Galois group over k.

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