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The construction of unramified cyclic quartic extensions of $\mathbb{Q}(\sqrt{m})$. (English) [Zbl 0576.12008](#)
Math. Comput. 45, 233-242 (1985).

The author studies the dihedral field K for which $K/\mathbb{Q}(\sqrt{m})$ is unramified and cyclic of degree 4. Arithmetic conditions on m are given by analyzing the discriminant factors. [See the author's earlier paper, *Math. Comput.* 40, 685-707 (1983; [Zbl 0527.12006](#)).] Illustrations include the cases $\mathbb{Q}(\sqrt{-14})$, $\mathbb{Q}(\sqrt{-46})$, etc., where K is the Hilbert class field.

Reviewer: [Harvey Cohn](#)

MSC:

- [11R23](#) Iwasawa theory
- [11R37](#) Class field theory
- [11R21](#) Other number fields
- [11R11](#) Quadratic extensions

Keywords:

cyclic quartic extensions; unramified extensions; dihedral field; discriminant factors; Hilbert class field

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