

Factors of small degree of some trinomials in $F[t][x]$

François Berrondo and Luis Gallardo

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Mathematics, University of Brest,
6, Avenue Le Gorgeu,
C.S. 93837,
29238 Brest Cedex 3, France.
E-mail: Luis.Gallardo@univ-brest.fr

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Address Correspondence to: Luis Gallardo,
Mathematics, University of Brest,
6, Avenue Le Gorgeu,
C.S. 93837,
29238 Brest Cedex 3, France.
E-mail: Luis.Gallardo@univ-brest.fr

Abstract Let $s \in F[t] \setminus F$ be a non constant polynomial over a perfect field F of characteristic 2. The trinomial $T = x^m + x^2 + s \in F[t][x]$ where $m > 3$ is an odd integer, has at most one factor of degree 1 and has no factors of degree 2 in $F[t][x]$. Furthermore, T has no cubic factors in $F[t][x]$ provided $m = 2^d - 1$ for some integer $d > 2$; or provided $m > 3$ and the constant coefficient $s \in F[t]$ of T is square free and has odd degree. Conjecturally T has no cubic factors in $F[t][x]$.