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M Filaseta* (filaseta@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208, and **S Laishram** and **N Saradha**. *A Diophantine problem arising from a study in Galois groups.*

After some general background into ongoing investigations associated with a certain Galois group problem, we give some details for the following Diophantine result. Fix a positive integer d and real numbers $\varepsilon > 0$ and $C \geq d$. Then the equation

$$n(n+d) \cdots (n+(k-1)d) = by^2$$

has finitely many effectively computable solutions in positive integers n , k , b and y satisfying

$$k \geq 3, \quad n \geq (C - d + \varepsilon)k, \quad P(b) \leq Ck,$$

where $P(b)$ denotes the largest prime factor of b . What is novel about the approach we give is the ability for us to handle arbitrarily large values of C . (Received March 08, 2008)