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**Bounds for Fibonacci period growth.** (English) Zbl 1225.11020

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**Summary:** We study the Fibonacci sequence mod  $n$  for some positive integer  $n$ . Such a sequence is necessarily periodic; we introduce a function  $Q(n)$  which gives the ratio of the length of this period to  $n$  itself. We compute  $Q(n)$  in certain cases and provide bounds for it which depend on the nature of the prime divisors of  $n$ .

**MSC:**

11B39 Fibonacci and Lucas numbers and polynomials and generalizations

11B50 Sequences (mod  $m$ )

**Keywords:**

Fibonacci sequence; Fibonacci periods; growth of Fibonacci periods; Fibonacci period mod  $n$

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