Search or Article-id   (Help | Advance

All papers

Mathematics > Number Theory

Littlewood Polynomials with Small L^4 Norm

Jonathan Jedwab, Daniel J. Katz, Kai-Uwe Schmidt

(Submitted on 1 May 2012)

Littlewood asked how small the ratio $\|f\|_4/\|f\|_2$ (where $\|.\|_\alpha$ denotes the L^α norm on the unit circle) can be for polynomials f having all coefficients in $\{1,-1\}$, as the degree tends to infinity. Since 1988, the least known asymptotic value of this ratio has been $\sqrt[4]{7/6}$, which was conjectured to be minimum. We disprove this conjecture by showing that there is a sequence of such polynomials, derived from the Fekete polynomials, for which the limit of this ratio is less than $\sqrt[4]{22/19}$.

Comments:	10 pages
Subjects:	**Number Theory (math.NT)**; Information Theory (cs.IT); Combinatorics (math.CO)
MSC classes:	Primary: 11B83, Secondary: 94A55
Cite as:	**arXiv:1205.0260** [math.NT]
	(or **arXiv:1205.0260v1** [math.NT] for this version)

Submission history

From: Jonathan Jedwab [view email]
[v1] Tue, 1 May 2012 20:48:27 GMT (11kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.

Download:

- PDF
- PostScript
- Other formats

Current browse cont

math.NT
< prev | **next >**
new | recent | 1205

Change to browse b

cs
   cs.IT
math
   math.CO

References & Citatio

- NASA ADS

Bookmark(what is this?)