



Mathematics > Number Theory

Average estimate for additive energy in prime field

Alexey Glibichuk

(Submitted on 23 Jul 2011)

Assume that $A \subseteq \mathbb{F}_p$, $B \subseteq \mathbb{F}_p^*$, $\frac{1}{4} \leq \frac{|B|}{|A|} \leq p^{\alpha}$, $|B| = p^{\beta}$. We will prove that for $p \geq p_0(\beta)$ one has $\sum_{b \in B} E_+(A, bA) \leq 15 p^{-\frac{\min\{\beta, 1-\alpha\}}{308}} |A|^3 |B|$. Here $E_+(A, bA)$ is an additive energy between subset A and its multiplicative shift bA . This improves previously known estimates of this type.

Comments: 19 pages
 Subjects: **Number Theory (math.NT)**
 MSC classes: 11T23
 Cite as: [arXiv:1107.4679 \[math.NT\]](#)
 (or [arXiv:1107.4679v1 \[math.NT\]](#) for this version)

Submission history

From: Alexey Glibichuk Anatolyevich [[view email](#)]
 [v1] Sat, 23 Jul 2011 11:04:32 GMT (11kb)

Which authors of this paper are endorsers?

Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

math.NT

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1107](#)

Change to browse by:

[math](#)

References & Citations

- [NASA ADS](#)

Bookmark ([what is this?](#))

