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On the distribution of p^α modulo one

par Xiaodong CAO et Wenguang ZHAI

Abstract. In this paper, we give a new upper-bound for the discrepancy

$$D(N) := \sup_{0\le\gamma\le 1} \Big| \sum_{\substack{p\le N \\ \{p^\alpha\}\le\gamma}} 1 - \pi(N)\gamma \Big|$$

for the sequence (p^α), when $5/3 \le \alpha < 3$ and $\alpha \ne 2$.

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