

To Jon Keating,

In this note I present some comments and typing errors made in the paper "The Variance of the Number of Prime Polynomials in Short Intervals and in Residue Classes" by Keating and Rudnick which I believe can improve the presentation of the same.

pg 1: Last sentence reads: "The Riemann Hypothesis ... formula $\psi(X, H) \sim H$.

to maintain consistency with definition (1.2) would be nice to enter the semicolon instead of comma.

$$\boxed{\psi(X; H) \sim H.}$$

pg 1: the same in the last line $\psi(x; H)$.

pg 2: Section 1.2 third line reads "... the number of primes $p \leq X$ with $p \equiv A \pmod{Q}$ " should be $p \equiv A \pmod{Q}$.

pg 2: the same for the index in the sum (1.4)

$$\sum_{\substack{n \leq X \\ n \equiv A \pmod{Q}}$$

pg 4: Section 2, first two lines. Appears in the first line $\mathbb{F}_q[t]$ and in the second line capitalized $\mathbb{F}_q[T]$. Would be nice to keep the consistency and let ~~the~~ $\mathbb{F}_q[t]$ or $\mathbb{F}_q[T]$ along all the paper.

pg 4: Section 2.1, the short intervals are denoted by $I(A; h)$

would be nice ~~keeping~~ Keep using semicolon instead comma.

pg 5: Equation (2.10) the index in the summation

$$\sum_{\substack{\deg N = n \\ N \equiv A \pmod{Q}}} \Lambda(N)$$

pg 5: Keep the consistency with the notation for equation (2.12) $G(n; Q)$ along the paper, using semicolon instead comma.

pg 5: In the Theorem 2.2 part ii) you fix n . I would like to know if ~~an~~ something can be said about the limit $n \rightarrow \infty$ and $\deg(Q) \rightarrow \infty$ and q fixed?

pg 6: Lemma 3.1 equation (3.8). What means $d < n$?? d is not a polynomial?

pg 7: Equation (3.13) should be $N \equiv A \pmod{Q}$.

pg 9: reads " $U=1$ " should be $u=1$.

pg 11: Equation (4.5) index in the sum $f \equiv A \pmod{Q}$.

pg 12: Keep the semicolon in $\text{Var}(\psi(\cdot; h))$.

~~pg 13: " " " " " "~~

pg 15: " " " " $G(n; Q)$ Proposition 5.1.

pg 16: Second line should be $N \equiv A \pmod Q$.

Keep the semicolon in $G(n; Q)$.

pg 17: " " " " " "

pg 18: " " " " " "

Line (Equation) (A.3) should be $A(A+K) \equiv 0 \pmod P$

pg 19: last sentence $f \equiv g \pmod Q$

pg 20: Is missing a parenthesis at Equation A.16

pg 21: insert lines symbol at (A.22) and (A.23)

Best wishes,

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