

Comments on Nattalie Tamam's Paper:  
 "The Fourth Moment of Dirichlet L-Functions  
 for the Rational Function Field"

First of all let me say that your paper is very interesting and very well written. What I present below are just a few suggestions that may or may not improve the presentation of the same.

pg 1 - Paragraph starting with "We work ..."

↳ You define  $A = \mathbb{F}_p[x]$  and says that  $Q \in A$  set  $|Q| = q^{\deg Q}$ . The correct in this case is set  $|Q| = p^{\deg Q}$ .

pg 2 - Before the statement of Theorem 1.2 you can cite that if  $Q \in A$  is irreducible so  $\chi_{\text{mod } Q}$  is a primitive character and thus the sum is over primitive characters.

pg 4 Section 3.1, you start calling "... ring over  $\mathbb{F}$ "

And in the next paragraph you use a different letter  $F$ .

Also in pg 4 you quote the following bound

$$\sum_{\deg N \leq x} d(N) \ll x q^x.$$

Maybe you can quote the original (classical) result here, see [Apo, Theorem 3.3].

(2)

pg 4 You say, 'if  $a_0=1$  then  $N$  is a monic polynomial'. The correct is if  $a_n=1$ .

pg 5 : You use and quote the  $\psi(x, z)$  Bruijin function. You could give some reference here.

pg 19-20 : The result for the formula that you establish for  $X$  not "even" have been appeared in a similar way in [And-Kea, Lemma 1].

pg 30-31 : You put the references

[3], [7], [14], [15], [25], [26], [27]

and don't quote these references in the main text.

I hope this notes can help you!

With warmest regards,

Julio.

References: [And-Kea, Lemma 1] - Andrade, J.C and Keating, JP  
The Mean Value of  $L(1/2, X)$  in the Hyp. Ensemble - ArXiv  
[Apo] Apostol, T.M. - Introduction to Analytic Number Theory.