



SDI Review Form 1.6

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2013_BJMCS_6716
Title of the Manuscript:	BERNOULLI POLYNOMIALS AND CONVOLUTION SUMS
Type of the Article	Research Paper

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The following comments are extremely important in order to correct some mistakes and adequately follow this paper: - The Introduction should contain more preliminary comments (clearly showing the connections with other previous papers and well-known formulae and identities) before the statement of the main results. See for example the paper "Elementary Evaluation of Certain Convolution Sums Involving Divisor Functions" of the authors "James G. Huard, Zhiming M. Ou, Blair K. Spearman, and Kenneth S. Williams" and compare Theorem 1 with Proposition 1.1 of the present paper. -Add "Bernouilli polynomials" to the Key words and phrases. -Page 1, line 8: In order to facilitate the lecture of the paper, provide a reference for the "well-known identities" on the Bernouilli polynomials. -Page 1, line 16: From the definition of $S_k(n)$, observe that $S_k(1)$ is not defined (the summation goes from $i=1$ to $i=0$). In this manner, revise this and adequately correct the sentence "For $n \in \mathbb{N}$ and $k \in \mathbb{N} \cup \{0\}, \dots$" -Page 1, line -1: The authors mention Liouville's Identity, but they do not write it. In order to facilitate the lecture and to motivate the following results, they must clearly show this identity and its connection with the new results of the paper (before Proposition 1.1).	



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	-Page 2, line 16 and 20 (Theorem 1.4): The authors must precise if $l \in \mathbb{N}$ (line 16) or $l \in \mathbb{N} \cup \{0\}$ (line 20). Furthermore, they must also precise if $n \in \mathbb{N}$, $n > 2$, in the statement of the theorem. -Page 3, line 18: In formula (5), what is $\sigma_1(n)$ and $\sigma_0(n)$? The authors must define them (from [2, p.247]). -Page 3, line 21: It is necessary to replace "$k \geq 1$" by "$k \geq 2$" in the index of the summation (note that $a+b=k$). -Page 4, line 7: Replace "$a+b+c=n$" by "$a+b+c=2n, n \in \mathbb{N}$" in the index of the first summation. -Page 5, line 1: Replace "$a+b+c=n$" by "$a+b+c=2n-1, n \in \mathbb{N}$" in the index of the first summation. -Page 5, line 7: This equality is false, the authors must replace "$a+b+c=n$" by "$a+b+c=2n$" in the even case and "$a+b+c=2n-1$" in the odd case. -Page 5, line 11: It is necessary to replace "$k \geq 1$" by "$k \geq 3$" in the index of the summation (note that $a+b+c=k$). -Page 6, line 1: Replace "$a+b+c+d=n$" by "$a+b+c+d=2n, n \in \mathbb{N}$" in the index of the first summation. -Page 6, line 10: Replace "$a+b+c+d=n$" by "$a+b+c+d=2n-1, n \in \mathbb{N}$" in the index of the first summation. -Page 6, line -1: This equality is false, the authors must replace "$a+b+c+d=n$" by "$a+b+c+d=2n$" in the even case and "$a+b+c+d=2n-1$" in the odd case. -Page 7, l.-2: Provide a reference for Faulhaber's sum. -Page 10, l.-1: Delete the symbol of summation. The last equality is equal to "$S^2_{t+1}(n) - S^2_0(n)$."	
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<u>Minor</u> REVISION comments	I find the current exposition in the paper to be a difficult read. May I ask the authors to please consider the following small suggestions for possible improvement: -Page 1, line 13: Replace "$B_m=B_m(0)$" by "$B_m:=B_m(0)$" -Page 1, line 13: Add commas. "It is obvious, from the way..., that all the..." -Page 1, line 16: Replace "we define a summation, which also appear..." by "we define a summation which also appears..." -Page 2, line 10: Replace "and so using this.." by "and so, by using this,..." -Page 3, line 6: Replace "Using this four basictheta functions," by "For $k,n\in\mathbb{N}$, by using the four basic theta functions," -Page 4, line 3: Delete "the" in the phrase "the Example 2.1" -Page 4, line 5: Delete "the" in the phrase "in the Lemma 1.2" -Page 4, line 9: Replace "of of the Lemma 1.2" by "of Lemma 1.2" -Page 5, line 8: Replace "the Lemma 1.3 by the similar manner to the Lemma 1.2" by "Lemma 1.3 of a similar manner to Lemma 1.2". -Page 4, l.-2: Delete "the" in the phrase "of the Lemma 1.3" -Page 8, l.1: Replace "with the Bernouilli number B_j. And we can..." by "with the Bernouilli numbers B_j. Also, we can..." -Page 8, l.-7: Replace "And the right..." by "On the other hand, the right..." -Page 9, l-10,-9: Replace this sentence by "It is well-known that the Riemann zeta function and the generalized Riemann zeta function are given by..., respectively". Add an adequate reference in order to facilitate the lecture of the paper.	
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	-Page 9, l.9,-8: Replace “We can change Eq. (13) as” by “Equation (13) can be rewritten as” -Page 9, l.-4: Replace “since” by “Indeed, observe that” -Page 10, l.1: Replace “with” by “and”. -Page 10, l.6: Replace “and” by “Furthermore,” -Page 10, l.11: Delete “the” in “in the Theorem 1.4” -Page 10, l.13: Delete “the” in “From the Theorem 1.4”	
<u>Optional/General</u> comments	I recommend publication on the condition that the paper receives a very careful and thorough revision (not only the mathematical things but also the redaction). There are a lot of problems with the format (look at the margin of the abstract or the blanks in the manuscript after a formula in the same paragraph, for example), the English language and the redaction of the paper.	

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