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Journal Name:	<u>British Journal of Mathematics & Computer Science</u>
Manuscript Number:	2013_BJMCS_7023
Title of the Manuscript:	Gradient-Orthonormal Bases of Momentum-Entire Wavelets in Odd Dimension
Type of the Article	

General guideline for Peer Review process:

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	*A momentum-entire function is an integrable function of several variables such that the analytic continuation of its Fourier transform is an entire function of the several complex variables. A natural example of a momentum-entire function in n variables would be a Gaussian on $\mathbb{R}^n$. Orthonormal bases of momentum-entire wavelets are not really new, at least in the Hilbert space $L^2(\mathbb{R}^n)$. Many years ago [3, 4], a method of constructing gradient-orthonormal bases of exponentially localized wavelets was found. In this paper the authors construct a gradient-orthonormal basis of momentum-entire wavelets in odd dimension n. The basic scale factor is $\sqrt{3}$ instead of 2, and the coherence on each scale is based on the propagation $\exp(\vec{s} \cdot \vec{\nabla} \Delta)$, instead of on translation, which is given by $\exp(\vec{s} \cdot \vec{\nabla} \Delta)$. The paper is organized as follows: In section 1 the authors give the introduction and some interesting remarks on gradient-orthonormal bases. In section 2, they introduce a unitary transformation induced by a non-	



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	linear transformation in the momentum coordinates. They observe that the important property of U is that if g is a momentum entire function, then so is Ug. In particular, the application of U to a Daubechies wavelet yields a momentum-entire function. In section 3 they apply U to the wavelet basis D described in the Introduction (see Page 2, Line 11). In Section 4 they investigate the propagation $\exp(\vec{s} \cdot \vec{\nabla} \Delta)$, Δ), which naturally decomposes into two parts. One of them is a directional convolution with a scaling of the Airy function [9]. The other part is an n-variable convolution which nevertheless reduces to a one-variable function F(x) such that $xF''(x) + \left(\frac{5}{2} - \frac{1}{2}n\right)F'(x) - F(x) = 0.$ This ordinary differential equation is obviously a little different from the Airy equation. Finally in section 5 there exists a Appendix. The article is well organized and it is written in a clear way. It also contains good results. For this reason, I think the paper is appropriate for publication in the "British Journal of Mathematics and Computer Science" There are only some minor corrections as follows:	
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	1. The Remarks 1 and 3 must be written more analytically. 2. In this paper there are not exist examples. They must give simple examples. 3. The authors must give a better explanation of relation (3.17). 3. There are some minor corrections as follows: PAGE 2, line 10↑ elemnts --> elements PAGE 11, line 8 d verges --> diverges Also need to see the whole article for the dots and commas.	
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		

*Comments was receive an separate PDF file from reviewer

Note: Anonymous Reviewer