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Review text:

This short paper is suitable for students and researchers interested in multidimensional signal processing. In particular $L^2(\mathbb{R}^2;\mathbb{H})$ signals are considered. As described in the introduction, the author mainly reviews results of [B. Mawardi, et al, *Windowed Fourier transform of two-dimensional quaternionic signals*, Appl. Math. and Computation, 216, Iss. 8, pp. 2366-2379, 15 June 2010.], abbreviated from now on as Bahri2010. Here we only comment on new content.

Section 3.2 introduces a discrete quaternion Fourier Transform (QFT), similar to [S.J. Sangwine, "The problem of defining the Fourier transform of a colour image," icip, vol. 1, pp.171, 1998 International Conference on Image Processing (ICIP'98) - Volume 1, 1998].

Section 3.3 discretizes the continuous two-dimensional (2D) time-varying (TV) system treatment of Bahri2010. In the examples filters identical to the kernels of the QFT and the inverse QFT are used. The f on the right hand side of line one of (22) should correctly be F.

Section 3.4 introduces an alternative proof of the QFT Plancherel formula. Yet (27) is evident because $\mathcal{F}^{-1}\mathcal{F} = Id$, and by the same reason the factor $(2\pi)^2$ should be replaced by 1. In (32) the tilde should be replaced by an overbar.

In Section 4.1 an orthogonality relation for two windowed QFT signals is introduced with two different windows. In (42) the function g on the left hand side should be replaced by f. Theorem 4.2, (45) is incorrect, since in general the square of the inner product of two quaternion functions does not equal the product of the squared function norms, compare the norm definition (12). Yet

the single window reconstruction formula (46) of Bahri2010 remains valid. For the two window reconstruction formula (50), an extra condition of cross window compatibility, i.e. that the two windows have non-zero inner product, needs to be added to the conditions of Theorem 4.2.