Correspondence

Correction to "Multichannel Azimuth Processing in ScanSAR and TOPS Mode Operation"

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This correction refers to [1, Eqs. (6), (7), and (19)]. In specific, the factor of 2 in these equations is not appropriate to represent the complex ambiguous spectrum for both signs of index k.

In [1, Eqs. (6) and (7)], index m was restricted to $\{m_0, N\}$, $m_0 = \max\{N-k+1, 1\}$, which is valid for $k > 0$, while for $k < 0$, a restriction to $\{1, m_1\}$, $m_1 = \min\{-k, N\}$, is appropriate. Notably, such restrictions only remove zero contributions from the sum. Consequently, considering the full range for index m from $\{1, N\}$ leaves the result unchanged while extending the validity to both signs of k. Hence, the corrected equations should read as follows

$$p_{\mathrm{a}} = \mathrm{E}\left[\left|\sum_{\substack{k=-\infty \\ k\neq 0}}^{\infty}\left(U_k(f)\cdot\sum_{m=1}^{N}\sum_{j=1}^{N}H_{jk}(f)\cdot P_{jm}(f)\right)\right|^2\right] \tag{C.6}$$

$$p_{\mathrm{a},B_{\mathrm{D}}} = \mathrm{E}\left[\left|\sum_{\substack{k=-\infty \\ k\neq 0}}^{\infty}\left(U_k(f)\cdot\sum_{m=1}^{N}\sum_{j=1}^{N}H_{jk}(f)\cdot P_{jm}(f)\right)\cdot\mathrm{rect}\left(\frac{f}{B_{\mathrm{D}}}\right)\right|^2\right]. \tag{C.7}$$

Accordingly, (19) should read as

$$p_{\mathrm{a},B_{\mathrm{s}}} = \mathrm{E}\left[\left|\sum_{\substack{k=-\infty \\ k\neq 0}}^{\infty}\left(U_k(f)\cdot\sum_{m=1}^{N}\sum_{j=1}^{N}H_{jk}(f)\cdot P_{jm}(f)\right)\cdot\mathrm{W}(B_{\mathrm{s}})\right|^2\right]. \tag{C.19}$$

Side remark: The results presented in [1] were built on the basic relationships derived in [2]. Please refer also to the corrections to [2].

References

[1] N. Gebert, G. Krieger, and A. Moreira, "Multichannel azimuth processing in ScanSAR and TOPS mode operation," *IEEE Trans. Geosci. Remote Sens.*, vol. 48, no. 7, pp. 2994–3008, Jul. 2010.

[2] N. Gebert, G. Krieger, and A. Moreira, "Digital beamforming on receive: Techniques and optimization strategies for high-resolution wide-swath SAR imaging," *IEEE Trans. Aerosp. Electron. Syst.*, vol. 45, no. 2, pp. 564–592, Apr. 2009.

Received May 7, 2013. Date of publication July 3, 2013; date of current version July 22, 2013.

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Digital Object Identifier 10.1109/TGRS.2013.2264732