Correction on “Towards Detecting Swath Events in TerraSAR-X Time Series to Establish NATURA 2000 Grassland Habitat Swath Management as Monitoring Parameter”

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We found a mistake in the swath detection rule in Section 2.4 [1]. Specifically, the percent deviation calculation in the definition of the signal changes \( D_1 \) and \( D_2 \) and axiom \( A_2 \) are altered. The correct version shall be:

Consequently, the proposed rule for the detection of swath events consists of two axioms (\( A_1 \) and \( A_2 \)) that need to be satisfied. For the signal backscatter (\( \sigma^o \)) at a specific acquisition order number (\( k \)) of the acquired scene in the time series (\( N \)), the positive or negative signal changes in percent deviation for the first (\( D_1 \)) and second (\( D_2 \)) acquisition after a potential swath event are considered as:

\[
D_1 = \frac{(\sigma^o(k) - \sigma^o(k-1))}{(-\sigma^o(k))} \times 100
\]

\[
D_2 = \frac{(\sigma^o(k+1) - \sigma^o(k))}{(-\sigma^o(k))} \times 100
\]
The second axiom focuses on the absolute magnitude of signal change:

\[
|D_1| > \sum_{i=1}^{N} \frac{|\sigma^0(i-1) - \sigma^0(i)|}{N} \times (\sigma^0(i)) \times 100 \text{, where } \forall i, D_i \geq \approx 10\% \\
\text{AND} \\
|D_2| > \sum_{i=1}^{N} \frac{|\sigma^0(i-1) - \sigma^0(i)|}{N} \times (\sigma^0(i)) \times 100 \text{, where } \forall i, D_i \geq \approx 5\%
\]

If (A1) and (A2) are satisfied then:

\[ \sigma^0(k) \Rightarrow \text{swath} \]

References