Erratum to S. Dekel and D. Leviatan, Adaptive multivariate approximation using binary space partitions and geometric wavelets, SIAM Journal on Numerical Analysis 43 (2005), 707-732.

In the paper we define (see before Theorem 2.1) that a binary space partition $\mathcal{P}$ is in $BSP(\rho)$, $3/4 < \rho < 1$, if for any child $\Omega' \in \mathcal{P}$ of $\Omega \in \mathcal{P}$, we have $|\Omega'| \le \rho |\Omega|$. For Theorem 2.1 to hold, we also need to add the following condition:

Let $\{\mathcal{P}_m\}$ denote the levels in a BSP partition tree $\mathcal{P}$. Then for each $\Omega \in \mathcal{P}$

$$\max\left\{diam(\Omega'),\ \Omega' \subset \Omega,\ \Omega' \in \mathcal{P}_m\right\} \to 0 \text{ as } m \to \infty.$$

This property is needed to prove the first claim of Theorem 2.1, that the geometric wavelet representation of an L_p function converges a.e.. In [13], where nested triangulations are used, this property is derived from the properties of Weakly Local Regular triangulations. However, in this paper, we need to explicitly add a requirement of this type, since we allow arbitrary convex polyhedrons, beyond 2D triangles.

We thank Albert Cohen for pointing out to us this critical mistake.