Erratum

In early 2023, we discovered that some statements in the second part of the manuscript were inaccurate. In the process of correcting them, we discovered new properties of exposed faces, and significantly changed our approach to the support recovery result. This new approach is presented in the following work.

[1] **Exact recovery of the support of piecewise constant images via total variation regularization**, Y. De Castro, V. Duval and R. Petit, *preprint*, 2023.

We list below some important differences with the original presentation.

Structure of exposed faces. We realized that faces exposed by C^1 functions have a simpler structure than arbitrary faces. In [1, Theorem 3.8], we prove that k-dimensional exposed faces are k-simplices. This shows that elements of such faces can be decomposed in a unique way as a convex combination of extreme points. As a consequence, the approach described in [1] does not make use of the notion of chains (see [1, Section 3] for more details).

Theorem 2.24. In short, the statement should be reversed, in the sense that, for every η close to η_0, every maximal chain of $\mathcal{F}$ is related to a maximal chain of $\mathcal{F}_0$. In the proof, we used the fact that G belongs to $\mathcal{C}_0$, which is something we cannot guarantee. The correct statement is Theorem 5.1 in [1].