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where  $k$  is an oriented  $q$ -dimensional simplex of  $K$ , is a cocycle representing  $f^*(\beta) \in H_{\text{simp}}^q(K)$ . Because  $BG_q$  is compact and  $f$  is semi-algebraic of uniformly bounded complexity on every simplex  $k$  of  $K$ , it follows that  $\int_{f_*(k)} \omega$  is uniformly bounded, so that  $f^*(\beta)$  is represented by a uniformly bounded cocycle. The bound is independent of  $K$  and  $f$ .

FINITENESS. From appropriate triangulations of the Cartesian products  $G^i$ , for  $i = 0, \dots, q$ , it is not hard (but rather cumbersome) to exhibit a triangulation of the model of the classifying space  $BG$  given by the join construction which projects, via the natural projection  $BG \rightarrow \Delta^q$  onto the first barycentric subdivision of  $\Delta^q$ . A classifying map  $f: |K| \rightarrow BG^\delta \rightarrow BG$  having the property that, composed with the natural projection  $BG \rightarrow \Delta^q$ , it maps simplices of  $K$  isomorphically to simplices of  $\Delta^q$  (such a map can always be found), does admit a simplicial approximation, upon passing to the *first* barycentric subdivision of  $K$ . The set  $I$  of Theorem 4 is hence potentially much sharper. However, we are not aware of explicit triangulations of the products  $G^i$ 's.

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