

INTRODUCTION.- By using the definitions of o-regular and completely o-regular functions from a topological space S to a finite directed Graph G (see Background we go on (see [3],[4] and [5]) with the study of normalization theorems for regular homotopy. To this purpose, given a partition P of S , we introduce the definitions of quasi-constant and weakly quasi-constant function with respect to P (see Definitions 4 and 10). Then, by using also the first normalization theorem (see [4], Theorem 12) we prove that any o-regular function from a compact space S to G is completely o-homotopic and weakly quasi-constant w.r.t. a suitable partition P . (The second normalization theorem) (see Theorem 3).

The previous theorem can be refined when S is a compact triangulable space, proving that any o-regular function from S to G is completely o-homotopic to a function pre-cellular w.r.t. a suitable decomposition $(*)$ C of S . (The third normalization theorem) (see Theorem 6).

Moreover we prove that between two pre-cellular functions which are o-homotopic, there exists also a homotopy which is pre-cellular w.r.t. a suitable decomposition of $S \times I$. (The third normalization theorem for homotopies) (see Theorem 8).

Then all the previous results are generalized to the case between pairs of topological spaces and of graphs (see § 5,6) and to the case between $(n+1)$ -tuples (see § 7).

At least we apply the results to the case of n -dimensional groups of regular homotopy and we obtain that in any class of regular homotopy group there exists a loop which is a pre-cellular function w.r.t. a suitable triangulation (subdivision into cubes) of I^n . With references to this, we remark that the subdivisions into cubes are useful to give a combinatorial interpretation of homotopy groups by blocks of vertices:

(*) For simplicity, we consider the finite decompositions C of S by (open) CW-complexes which satisfy the condition that for all $\sigma \in C$, $\bar{\sigma}$ is a subcomplex of C .

(see [10]).

The previous results will be used in a next paper to prove that regular homotopy groups are isomorphic to the classical homotopy groups of the polyhedron $|K_G|$ of the simplicial complex K_G associated with G , whose simplexes are given by the totally headed subsets of G .