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MORPHISMS FROM DIFFERENT POINTS OF VIEW (CODING,  
FORMAL LANGUAGES, DYNAMICAL SYSTEMS)

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The triple  $G=(\sigma, h, w)$  where  $\sigma$ -alphabet,  $h: \sigma^* \rightarrow \sigma^*$  morfism,  $w$ - word over  $\sigma$ , is called DOL-system. It defines the language  $L(G)=\{ h^i(w) : i \geq 0 \}$ ,  $G$  can generate sometimes infinite words as well. These definitions are parallel to corresponding definition of substitutional dynamical system, so the properties of words in DOL languages (repetitions, periodicity, local catenation and so on) are important in the theory of these dynamical systems.

The systems and their trajectories can be described by means of structures and hierarchies what can be compared with analogs for DOL-systems.

The description by means of marcov compacta is outlined. The topological, combinatorial, metric, spectral, algebraic properties of dynamical systems are additive characteristics of morphisms. Problems of equivalency and admissible transformations (for example alphabet compression) are compared. Rather interesting and usefull (for example in the theory of fractals) are results on the substitutional systems of numeration. The equivalent properties of determinism, recognizibility, unique admissible decoding are discussed. The definitive recent theorem is: primitive substitution is either cyclic or UAD. Technical tools of proof are presented.