

This thesis investigates long-term topological behaviour of continuous self-maps or sets of continuous self-maps of metric spaces, mostly Peano continua. The first chapter is preparatory for the following two and summarize some properties of compact spaces with emphasis on Peano continua. In the second chapter, we give an overview of chaotic features and then we prove that for every Peano continuum  $X$  there exists a LEO self-map of  $X$  with a dense set of periodic points. In particular, such  $f$  is chaotic with respect to widely accepted Devaney's definition of chaos. The third chapter deals with topological fractals, we prove there a new sufficient condition under which a Peano space is a topological fractal, namely that any Peano continuum with uncountably many local cut-points is a topological fractal. We use this result to partially answer problems concerning regenerating fractals.