

# Phantom maps

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## Abstract

A continuous map  $X \rightarrow Y$  is called a phantom map if the composition  $K \rightarrow X \rightarrow Y$  is null homotopic whenever  $K$  is a finite dimensional CW-complex. Thus a constant map, or one homotopic to it, is an example of a phantom map but there are lots of phantom maps which are not null-homotopic. In this talk we will describe some essential phantom maps and we will give a survey of general results about phantom maps and the spaces  $X$  which occur as the domains of such maps. If time permits we will describe some open questions in this area.