Introduction

Another application of basis vectors in signal processing is in signal approximation and compression. In this lecture we will explore the power of orthogonal projections and approximation for a rather unusual vector space. Although the example is not an instance of discrete-time signal processing, it will hopefully illustrate the power of generalization provided by vector space theory and show that the same concept (dimensionality reduction) can be applied to abstract mathematical objects in the same way we will later apply it to audio or video files.