H-compactifications form an important type of compactifications, carrying the extra property that all automorphisms of a given topological space can be continuously extended over such compactifications.

Van Douwen proved there are only three H-compactifications of the real line and only one of the rationals. Vejnar proved that there are precisely two H-compactifications of higher dimensional Euclidean spaces. The concept of H-compactifications is introduced at the beginning, extra emphasis being put on the Alexandroff and Stone-Čech compactification. We summarize findings that exist about H-compactifications of some well-known spaces.

The result we come with in the Chapter 3 is that there is only one H-compactification of the set of all rational sequences, which is precisely the Stone-Čech compactification. The third chapter describes various properties of the set of all rational sequences and its clopen subsets. Some of them - mainly strong zero-dimensionality and strong homogeneity - are then used to reach the said result.

In the final Chapter 4, we ask a question about the set of all H-compactifications of the Hilbert space of all square summable real sequences and propose three ways to tackle this problem. We show that under certain conditions, any H-compactification of a space is homeomorphic to its Stone-Čech compactification. We look at H-compactifications of Euclidean spaces that have some properties in common with l^2. Finally, we construct a compactification of a space which is homeomorphic to l^2 and hence possesses the same set of H-compactifications.