

Abstract

Soft ferro-magnetic materials are well known and much used in the current technology and industry. High malleability and low coercivity of amorphous ferromagnetic alloys allow for a wide range of applications in electronics. Due to these properties, soft ferro-magnetic materials can also be used to study the effects of defects or regulated imperfections on a resonant frequency spectrum. Currently, the study of surface and bulk defects in crystals or regular periodic systems is becoming a major subject of theoretical and experimental investigation. Emergent phenomena induced by the defects have multiple practical applications ranging from development in topological materials to advancements in electronics. Hence, new adaptable and inexpensive methods to probe the effects of the defects on a system may be of interest. In this experiment, we induce controlled defects and create regulated patterns in the ferro-magnetic strip to study their effects on the frequency spectrum. We propose a new adaptable and inexpensive method to explore the effects of topological structures. We present here examples of such structures and their effects on the resonant spectrum of the ferro-magnetic strip.