PURE BENDING OF HONEYCOMB CORE

Kazune Tazawa

College of Engineering
Natural Sciences and Engineering Oral Presentation

Abstract: Honeycomb core is a cellular structure consisting of hexagonal cells. Honeycomb cores are widely used because of the ability enable sandwich structures to achieve high strength and stiffness with small density. Honeycomb is originally a natural structure in a beehive. Honeycomb cores are made by joining thin corrugated ribbons, which could be plastic or metal. The key property of honeycomb core is its relatively high-pressure resistance performance compared to the amount of material used, thus making it attractive for aerospace applications. We used two different types of honeycomb specimens conducting pure bending tests in two different force directions. This test applies both compression and tensile stresses on one structure at the same time. Each type of specimen is cut in three different ribbon directions. The aim of this research is to find the difference of strength and stiffness of honeycomb structure depending on the material direction and type of loading applied.

Faculty Mentor: *Suresh Keshavanarayana*