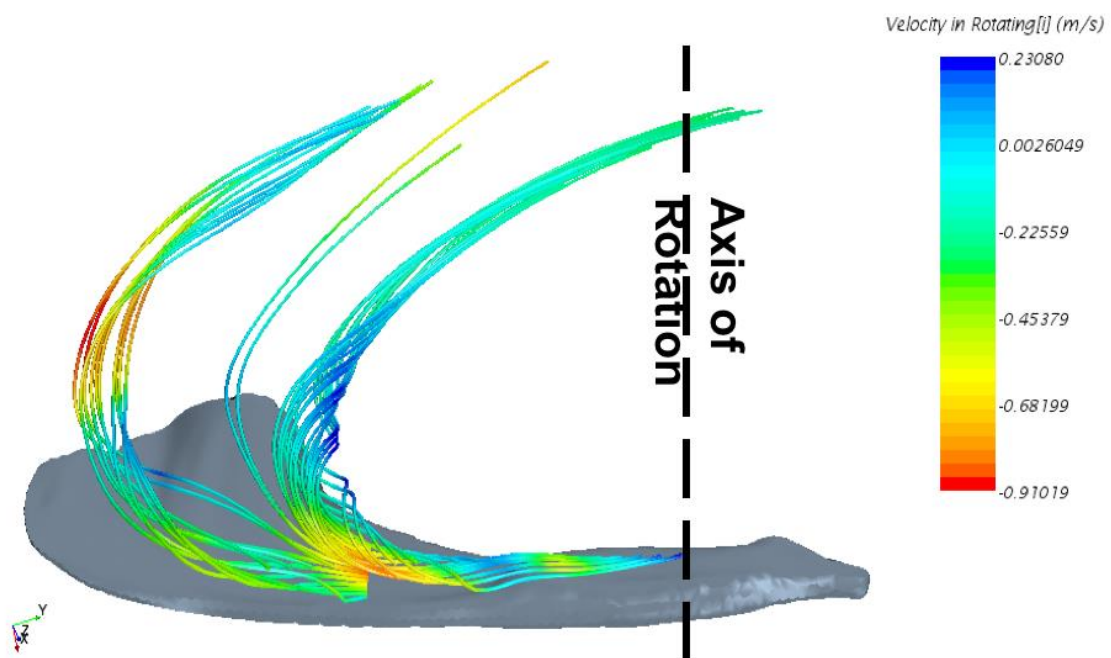


Protégé Topic: Decelerator (think parachute) Inspired by Maple Seed
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The most common decelerator is a parachute. It is used for returning space capsules, mars missions, plane safety devices, paratroopers, and humanitarian air drops. The maple seed is nature's perfect decelerator. See the figure below showing streamlines in the relative frame from a simulation of the maple seed using CFD by a UC MS student. A provisional patent has been issued for the ideas and further development is required. Funding for marketing of this device and some further prototype parts are available based on past protégé students' presentations to the UC Commercialization office. It turns out that many aspects of a maple seed help improve its role to descend slowly.

The protégé project will be:

- To test new concepts for uncontrolled designs and compare to models
- to further develop a controlled decelerator
- to integrate with concepts such as package delivery and rocket return



From MS thesis by Jacob Holden "Experimental Testing and Computational Fluid Dynamics Simulation of Maple Seeds and Performance Analysis as a Wind Turbine."