Protégé Topic: Controlled Decelerator Inspired by Maple Seed

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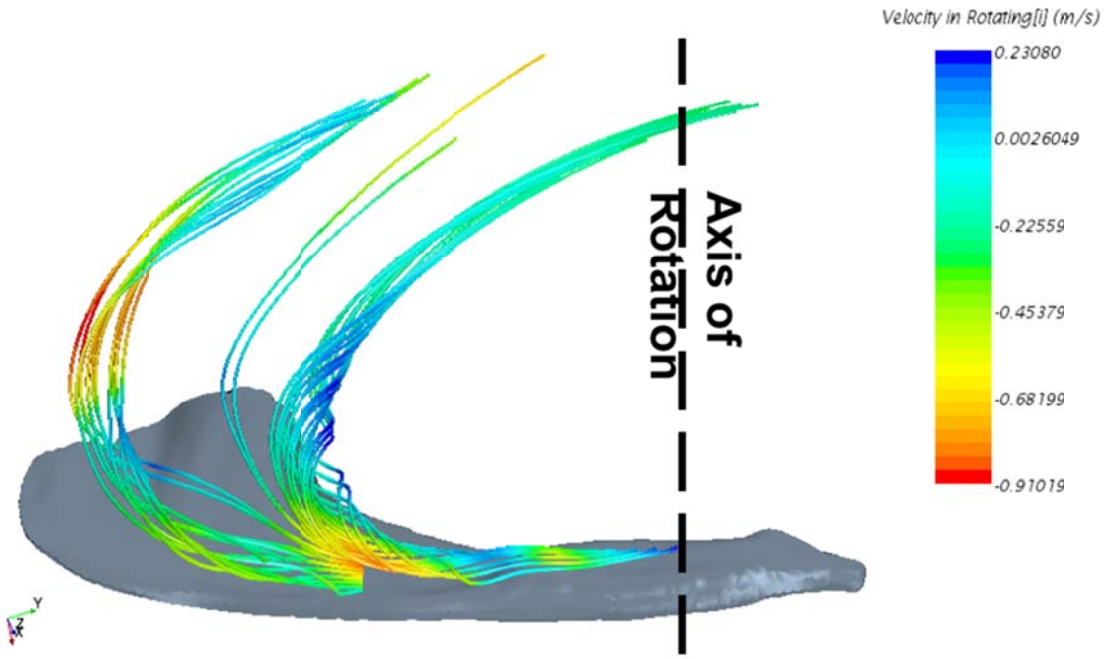
The most common decelerator is a parachute. It is used for returning space capsules, mars missions, plane safety devices, paratroopers, and humanitarian air drops. The maple seed is nature's perfect decelerator. See the figure below showing streamlines in the relative frame from a simulation of the maple seed using CFD by a UC MS student. It turns out that many aspects of a maple seed help improve its role to descend slowly.

The protégé project will be to develop a controlled decelerator based on a maple seed (bio-inspired). This was attempted several years ago as part of an MS thesis at MIT. That person was not successful due to the inability of the device to consistently be auto-rotating. Work on the design, controls, testing, and refinement will be done. This work will be done with a prior Protégé student.



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