



Aeronautics

AeroPod

Aerodynamically stabilized instrument platform for kites and tethered blimps

The AeroPod is a passive device that uses aerodynamic forces to stabilize an instrument package suspended from a kite or tethered blimp. It is a low-altitude custom remote sensing platform craft designed for, but not limited to, agricultural and environmental research purposes. AeroPods can be used for a variety of remote sensing and in-situ observations.

BENEFITS

- Simple, user-friendly—NASA's AeroPod remote sensing platform has the advantage of being light weight, simple to construct, and has no moving parts, which are major advantages over traditional systems.
- Versatile—AeroPods can be used for a variety of remote sensing and in-situ observations from low altitude kites or tethered blimps. Also, the AeroPod's unique features and geometry allow it to accommodate many different-sized instruments, even bulky ones.
- Low cost—AeroPods offer a low-cost alternative to other remote sensing and observation techniques.

technology solution



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THE TECHNOLOGY

The AeroPod's design for steadying and damping payloads includes the use of a tail boom and fin combination. It is a novel design and provides a relatively simple alternative to the traditional methods for suspending equipment from kites or blimps.

The AeroPod is superior to the traditional 'Picavet' pulley-style suspension system for kite-flight because it's light weight, simple to construct, and has no moving parts. Furthermore, the AeroPod design is advantageous to the traditional tethered blimp suspension technique where tether motion is translated directly to the sensor system because the AeroPod is free of direct motions of the tether.



The Air Column Profiler Aeropod, being flown by a kite in the above photo, is used to capture a variety of atmospheric parameters throughout the air column.

APPLICATIONS

The technology has several potential applications:

- Agricultural and environmental research purposes
- Observing and documenting forest canopy and cover
- Taking wetland studies
- Archeological and geological mapping
- Urban pattern mapping
- Crop monitoring

PUBLICATIONS

U.S. Patent 8,196,853

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