

TAKE-OFF AND LANDING OF BALANCED KITES

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Using two kites rotating around each other while connected to a Y-shaped tether has a number of advantages over using only a single kite. First, overall drag is reduced significantly because only the end parts of the tethers move fast in crosswind direction. Second, the configuration counterbalances the centripetal forces that are induced by flying curves. This counterbalancing also acts as a major advantage in the retraction phase of the pumping generation approach, where both kites pull against each other and not in the direction of the main tether.

In order to validate this method, techniques for automatically launching and landing the two-kite system are developed and applied in conceptual ground station designs. The final small-scale balanced kite ground station, currently in development, will also be capable of launching and landing single kite systems, so control strategies can be verified.



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