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Abstract:

A high-performance propeller has one hub and a plurality of blades, characterized in that a double-side or a single-side arc brim is provided at the tip of each blade. The propeller of the invention can provide a small induced drag and convert the centrifugal force to the effective force so as to increase the differential pressure near the tip of blades and thereby increase the acting force on blades. Under the condition of same power consumption, it has been tested for the large propeller in the type of lateral inclination that the amount of flow is increased about 12%~17%, which is equivalent to save energy 40%~70%. Since the fluid dynamic performance presents the aspect ratio approaching infinity, the width of the blades can be increased whereas the induced drag is not increased. Applying the method of increasing the area of the blades and decreasing the velocity of outflow fluid, the effect on saving of energy can be further improved greatly on the present basis. (Fig 1)