

An Experimental Study of Diffuser-Enhanced Propeller Hydrokinetic Turbines

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Abstract : Wind tunnel experiments of horizontal axis propeller hydrokinetic turbines model were carried out, in order to determine the performance behavior for different configurations and operational range. The present experiments introduce the use of two different geometries of rear diffusers to enhance the performance of the free flow machine. The present paper reports an increase of the power coefficient about 50%-80%. It represents an important feature that has to be taken into account in the design of this kind of machine.

Keywords : diffuser-enhanced turbines, hydrokinetic turbine, wind tunnel experiments, micro hydro

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