عنوان مقاله:

DETERMINING DYNAMIC AERODYNAMIC COEFFICIENTS USING BOEING-VERTOL AND DMST MODELS

محل انتشار:

نهمین کنفرانس بین المللی دانش و فناوری مهندسی مکانیک,برق و کامپیوتر ایران (سال: 1402)

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خلاصه مقاله:

In this paper, an attempt is made to obtain the aerodynamic lift, drag and moment coefficients for a Darius vertical axis wind turbine with NACA۰۰۱۸ symmetric airfoil blades in dynamic mode. At first, while introducing the desired turbine and the aerodynamic model of the double multiple stream tube (DMST), we will use it to obtain the momentary attack angle and velocity on the turbine blade. In the following, the dynamic stall will be explained and by using the Boeing-Vertol dynamic stall model, the values of the aerodynamic coefficients in the static drag state are corrected and the values of the dynamic lift, drag and moment coefficients are obtained and drawn. From the results of this research, the dynamic forces acting on a vertical axis wind turbine can be simulated and it can be used in more accurate modeling of the turbine in terms of aerodynamics and specifying the aeroelastic behavior, which leads to more effective design and improvement of the efficiency of vertical axis wind turbines.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا: