新型風力渦輪於設計階段之空氣動力特性數值探討

龔棉英、吳佩學

E-mail: 9511517@mail.dyu.edu.tw

摘 要

中文摘要　本研究裡用計算流體力學(CFD)之Fluent軟體，對新型風力渦輪，名M1於設計階段之空氣動力特性數值做探討；以數學式包含二維穩態與三維非穩態的質量守恆、動量守恆方程式求解。求解流場包含層流與紊流，而紊流的計算採用k-ε兩方程式紊流模型。本研究之三維、漸縮、有扭轉的風力渦輪M1葉片採用混合HH-10/HH-12非對稱形翼切面作設計。與其相關重要的氣動力性質，包含壓力、扭力、氣動功率等，本研究在大範圍的風速與葉片偏斜角做探討。所得預測結果將可提供設計人員作應力分析的設計參考，並做為將來進一步做風車氣動力學分析的負載條件。

關鍵詞 : 計算流體力學，空氣動力學，風車，扭力，氣動功率，偏斜角

目錄

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