Modélisation et Commande d'une Chaine de Conversion d'Energie Renouvelable.

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Abstract: The imminent exhaustion and uncontested from fossil resources has motivated researchers worldwide to find alternatives to such resources in order to ensure equilibrium in energy requirements, which continues to grow. So it is in this context fits the work presented in this thesis. It concerns the modeling and the control of wind energy conversion chain based on a double fed induction machine (DFIG). An indirect control of active and reactive power ensuring optimal functioning is presented. Furthermore, because of inevitable variations of the parameters a fuzzy adaptive control and neural control have been proposed to evaluate the performance and robustness of the control overlooked the parametric variations.

Keywords : éolienne, MADA, Commande adaptative, réseau de neurone, logique floue, performances.