Application of Low-order Modeling Techniques and Neural-Network Based Models for System Identification

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Abstract : The system identification from the turbulence wakes will lead to the tactical advantage to prepare and also, to predict the trajectory of the opponents' movements. A low-order modeling technique, POD, is used to predict the object based on the wake pattern and compared with pre-trained image recognition neural network (NN) to classify the wake patterns into objects. It is demonstrated that low-order modeling, POD, is able to predict the objects better compared to pretrained NN by $\sim 30\%$.

Keywords : the bluff body wakes, low-order modeling, neural network, system identification

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1

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