

# **An induction motor model for system frequency response models**

L. Rouco Rodríguez; L. Sigríst

## **Abstract-**

**This paper presents a simple induction motor (IM) model for system frequency response (SFR) simulations. SFR simulations are widely used to analyze frequency stability of small isolated power systems. Isolated power systems are especially sensitive to generation-load imbalances due to their small size. The IM shows a proportional-derivative like behavior to active-power disturbances. The response of the proposed IM model is compared with the response of a detailed non-linear IM model. Responses of the proposed and detailed IM models show a good agreement. Further, the impact of load modeling on the performance of the UFLS scheme of a Spanish small isolated power system is shown. Finally, the impact of load shedding on load responsiveness, ie, load characteristics, is shown.**

**Index Terms-** frequency stability; induction machine; system frequency response model

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