Modeling of Line-Starting of Reluctance Synchronous Motors
Considering Magnetic Saturation, with Experimental Validation

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Abstract

This paper presents aspects regarding the saturation influence upon the operation of the reluctance synchronous motors in case of some representative dynamic regimes. In this purpose, there have been detailed the mathematical model [1] and the Matlab [2] model conceived with its help. There are also presented the simulations obtained for a few concrete situations (ex. Fig. 1 and Fig. 2). The paper ends with experimental results and conclusions.

Conclusions:

- the increase of the \( L_s \) has a weak stabilizing effect;
- the increase of the inertia moment makes the synchronization to be reached after a great number of oscillations of the current.

References