

**INTERNATIONAL CONFERENCE
ON
ELECTRICAL MACHINES**



ESPOO FINLAND

**HELSINKI UNIVERSITY
OF TECHNOLOGY**

ESPOO FINLAND



Helsinki University of
Technology
Espoo Finland

Induction motor analysis in the ABC/abc reference frame including saturation effects

Clovis Goldemberg

Escola Politécnica
Universidade de São Paulo
Av. Luciano Gualberto, 3/158
São Paulo SP Brazil 05508-900
clovis@pea.usp.br
Fax: (55) (11) 818-5719

Aderbal A. Penteado Jr.

Escola Politécnica
Universidade de São Paulo
Av. Luciano Gualberto, 3/158
São Paulo SP Brazil 05508-900
aderbal@pea.usp.br
Fax: (55) (11) 818-5719

Francisco A. M. Salotti

Instituto de Eletrotécnica e Energia
Universidade de São Paulo
Av. Luciano Gualberto, 1289
São Paulo SP Brazil 05508-900
fsalotti@iee.usp.br
Fax: (55) (11) 210-7750

ABSTRACT

The study of induction machine electromechanical transients can be done in the ABC/abc reference frame. Parameters used in the simulation method can be obtained from no-load and locked rotor tests. Saturation effects can be considered by adapting the coefficients of the machine inductance matrix. Inductance measurements are made on two different motors and simulation of direct-on line starting is made considering this adaptation mechanism.

Keywords: Induction motors, simulation, modeling, saturation