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Research on Dynamic Model Building of Active Magnetic Bearing JIAN SHI, GUO-ZHENG YAN, KUN-DONG WANG, 820 Institute, School of Electron, Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, 200240, China — As for AMB(active magnetic bearing), many researchers and engineers use theoretical method presented by G. Schweitzer to get the dynamic model. But the model built in this way can not suspend the magnetic system effectively sometimes. Furthermore if any original physical parameter is changed or lost, the theoretical method will be out of work at all. This paper presents a simple and convenient experimental method to build the primary dynamic model of AMB. There is a special advantage that this process has no relation to any original parameter except the mass of rotor which can be obtained easily however. Base on the dynamic model, feedback control system is designed which can make AMB system suspended stably. Through online identifying with frequency method we get the so-called precise model. Finally three models from experiment, theoretical method and online identification respectively, are compared. Result shows that the model from experiment is much closer than that from theoretical method to the precise model.

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