

## 三相四线动态电压调节器的单周控制策略与仿真分析

李 承, 邹云屏

华中科技大学 电气与电子工程学院, 湖北省 武汉市 430074

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### 摘要

提出了一种三相四线系统动态电压调节器(dynamic voltage regulator, DVR)的单周控制模型。在分析主电路的基础上推导出了DVR的单周控制模型。在电压骤降、骤升以及电源中含有谐波的情况下对新建立的模型进行了仿真研究。结果表明,单周控制用于三相四线DVR既具有较好的动态特性,又控制电路简单。在电压变化范围不大于30%时有较好的补偿效果,并对电源谐波有一定的抑制作用。

关键词 [动态电压调节器; 单周控制策略; 三相四线系统; 控制建模; 电能质量](#)

分类号

## One-Cycle Control Strategy and Simulation of Dynamic Voltage Regulator for Three-Phase Four-Wire System

LI Cheng, ZOU Yun-ping

College of Electrical and Electronic Engineering, Huazhong University of Science and Technology,  
Wuhan 430074, Hubei Province, China

### Abstract

A new one-cycle control scheme of dynamic voltage regulator (DVR) for three-phase four-wire system is proposed. On the basis of main circuit analysis, the one-cycle control model for DVR is deduced and simulated under voltage sag by 35% of rated voltage, voltage swell by 35% of rated voltage and the condition that there are harmonics in power source. Simulation results show that DVR with one-cycle control for three-phase four-wire system not only possesses better dynamic characteristics, but also its control circuit is simple. The DVR with one-cycle control can offer better compensation while the voltage variation extent is less than 30% and can restrain harmonics in power source as well.

Key words [dynamic voltage regulator; one-cycle control strategy; three-phase four-wire system; control modeling; power quality](#)

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通讯作者

作者个人主页 李 承; 邹云屏

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