عنوان مقاله:
On Market-based Robust Load-frequency Control

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خلاصه مقاله:
In a deregulated environment, Loadfrequency control (LFC), as an ancillary service essential for maintaining the system reliability, acquires a fundamental role to enable power exchanges and to provide better conditions for the electricity trading. Since the LFC system is faced by new uncertainties in the liberalized electricity market, a reevaluation in traditional modeling and control structures is highly needed. In response to the coming challenge of integrating computation, communication and control into appropriate levels of system operation and control, a omprehensive scenario is proposed to perform the LFC task in a deregulated environment. As a part of the mentioned scenario, this paper addresses a new method to design of robust LFC with considering the communication delays. First the LFC problem is reduced to a static output feedback control synthesis for a multiple delays power system, and then the control parameters are easily carried out via a mixed ∞ /H H2 control technique, using a developed iterative linear matrix inequalities (ILMI) algorithm. The proposed method is applied to a 3-control area power system and the .results are compared with the recently developed ∞ H -based LFC designs

کلمات کلیدی:
LFC, Mixed ∞ /H H2 , Robust performance, Time delay, LMI