Sliding Mode Control Design of High Power Factor boost rectifier

Abstract:
This project presents the design of sliding mode control for high power factor boost rectifier. The proposed control operates in continuous conduction mode. Sliding mode control is a type of variable structure control where the dynamics of a nonlinear system is altered via application of high frequency switching control. This is a state feedback control scheme where the feedback is not a continuous function of time. Fast and stable response is achieved inspite of large output filter. Control complexity is same as that of standard current mode controls.

The proposed controller is an interesting solution when high efficiency and low cost circuits are required. Simulation circuit is done by using mathematical model in matlab/simulink.

Bio:
I am currently pursuing M.S in Electrical Engineering at Michigan Tech, and received my B.Tech in Electrical Engineering at JNTU University in 2008. My areas of interest include Power electronics, Distribution Systems, Computational Methods in Power systems