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# Analysis and Control of HVDC Transmission Power System

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## Abstract:

This paper presents a design of converter controllers and filters of Line Commutated Converter High voltage direct current (LCC-HVDC) power transmission system to increase loadability and reliability of long power transmission. Also the proposed tuned PI controllers for HVDC Converters are verified in sense of HVDC transmissionsystem performance and reliability. The studied system performances are compared with HVAC transmission systems in terms of power transfer quantity and reliability for a wide range of transmission distances and operating conditions. The Power Quality of HVDC transmission system is studied with Filters and proposed PI controllers .The two transmission systems (HVDC & HVAC) are simulated using MATLAB SIMULINK software package. With the control strategy, the HVDC system can provide a useful and economical way to transmit electric power over the long distance compared with HVAC system.

## Keywords:

LCC\_HVDC, HVAC, modeling, steady state, power losses, harmonic analysis, MATLAB SIMULINK

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