

Modeling and simulation of vehicle steer by wire system

Abstract:

The steer by wire system offer many benefits compare with conventional steering system. By eliminating the mechanical linkage of column shaft between the steering wheel and the front wheel system, it gives more space efficiency, fuel efficiency in term of functionality and at the same time present challenges to the designer. Many researchers have done their control strategy on steer by wire system in past recent years. This paper presents the control strategy for the wheel synchronization and the variable steering ratio. Mathematical modeling was created for steering wheel and front wheel model. The steering wheel and the front wheel system is control using PID controller and introduce a new feedforward variable steering ratio based on under propensity equation method. A simulation was made and compared in order to analysis the system performance.