

A comparison is held when the system is subjected to model uncertainty. The model uncertainty in this paper originates from the efficiency of the motor that drives the wheels of the robotic car.

From robust stability point of view, it was found that the system controlled using fuzzy controller is the best. It is stable when the system is subjected to model uncertainty up to 62%. It was also found that the system controlled using neural controller is better than that controlled using optimal controller. The system controlled using neural controller is stable when the system is subjected to model uncertainty up to 54%. Finally the system controlled using optimal controller can withstand model uncertainty up to 48%.

From robust performance point of view, it was found that the performance of the system controlled using fuzzy controller is the best performance. It is faster than the system controlled using neural and optimal controllers. It was also found that the performance of the system controlled using neural controller is better than that controlled using optimal controller.

It should be noted that the system controlled using neural controller is based on the input-output data from the system controlled using fuzzy controller. That is why its performance is near to that of fuzzy. More input-output data can enhance the performance to approach that of fuzzy.

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