Title:

Precise Task Control in Teleoperation

Abstract:

Teleoperation technology could help and substitute human to perform tasks conveniently in the long-distance or dangerous environment. One key point of teleoperation is how to make the operator get the force information which is generated when the slave robot interfaces with the environment, and make the slave robot follow the movement of the master hand controller in an accurate and timely manner. The teleoperation system becomes more and more popular and has been applied in nuclear power, space and telemedicine and also other areas. However, precise task control, as for a teleoperation control for the eye, heart surgery, is now still a hot and hard topic in the teleoperation area, because it is usually not easy to establish the precise unknown working environment model in the slave robot side, and the operator always could not feel the exact force he imposed to the master hand controller and the contact force generated by the slave robot during the interface with the environment. The ultimate goal of precise task control in teleoperation is help the operator know clearly and precisely the location of the end of slave robot and also master how much force the robot has imposed to the precise task object, and make the operator could succeed to fulfil the precise task smootly and safely.

Scope and Topics:

Potential topics include but are not limited to:

- ✧ Human-Robot Interface
- ✧ Human-Computer Interface
- ✧ High Precision Torque Sensors
- ✧ Information Fusion in Bilateral Control
- ✧ Haptics
- ✧ Tactile Perception
- ✧ High Precise Control Method
- ✧ Optimizing Bilateral Control

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