― KSME 招 待 講 演 ―

「Collision Safety Analysis and Safe Control of Collaborative Robots」

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Abstract

A new class of robots called the collaborative robot has been introduced to the industry to support the human-robot collaborative applications. The increased risk associated with the contact between humans and robots during the collaboration requires novel analysis and measures. To ensure the safety of the human sensors and control techniques are integrated to the robot system to avoid the unintended contact or/and minimize the contact force and pressure when it is not avoidable. In this lecture, the speaker will explain the current state of the art in terms of determining the biomechanical thresholds of the injury and pain of the human to the external contact force and pressure and a real-time virtual sensor technique to estimate the contact force and pressure which would result in by the contact between the robot and human. Also a safe control algorithm to maximize the velocity of the robot without violating the collision safety requirement given in ISO standards.