

A review of biodynamic feedthrough mitigation techniques

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Abstract: Biodynamic feedthrough (BDFT) refers to a phenomenon where accelerations cause involuntary limb motions which, when coupled to a control device, can result in unintentional control inputs. Biodynamic feedthrough can occur in many different vehicles and under various conditions, which makes it highly relevant to study its mechanisms. In this paper the possible biodynamic feedthrough mitigation techniques are discussed and evaluated. From these, two solution types are regarded to be the most promising. Measures of the first solution type are already commonly applied and consist of passive measures to restrain and immobilize body parts. The second solution type is the model-based cancellation approach, where use is made of a BDFT model to obtain a cancelling signal. The model-based cancellation approach is currently investigated.

Keywords: Biodynamic feedthrough, acceleration feedthrough, manual control, neuromuscular system