**Problem:** Create a vibrotactile feedback system to aid in control of a virtual prosthetic hand

**Importance:**
- Performance and control of prosthetics limited by lack of natural sensory feedback
- Vibrotactile feedback gives user more information, allowing ‘natural control’ of prosthesis

**Methods:**
- C2 tactors strapped to user provides vibrotactile feedback.
- Feedback cues designed for amplitude proportional to system state (error)
- Experimental setup uses virtual prosthetic in Simulink environment, controlled by EMG input from user
- Users tested on pose matching tasks

**Results:**
- Tactile feedback provides helpful contribution to matching task, both on its own and with visual feedback
- Visual + tactile feedback is superior to either form of feedback on its own

**Context:**
- EMG filtering techniques and tactile cue frequency and amplitude adapted from recent papers [1] [2]
- Virtual prosthetic adapted from Vanderbilt model [3]

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**Figure 1.** Subject with C2 tactors (left) and virtual prosthetic (right). Subject controls virtual hand (white) to the desired position (blue).

**Figure 2.** Performance of subjects under each feedback condition.

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**References**

