Metamech

Integrated active material flexures for vibration suppression

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Flexure mechanisms are usually limited to small deformations. When larger deflections are required, it can be difficult to avoid resonances at relatively low frequency. This degrades the achievable positioning bandwidth close to the boundary of the workspace.

We show that problematic resonances in deflected state can be damped by including active material in the flexures. Thereby, the usability of flexure hinges in deflected state can be significantly improved.