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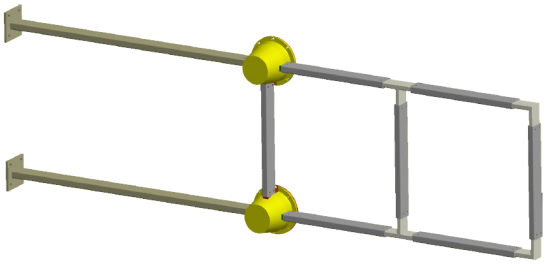
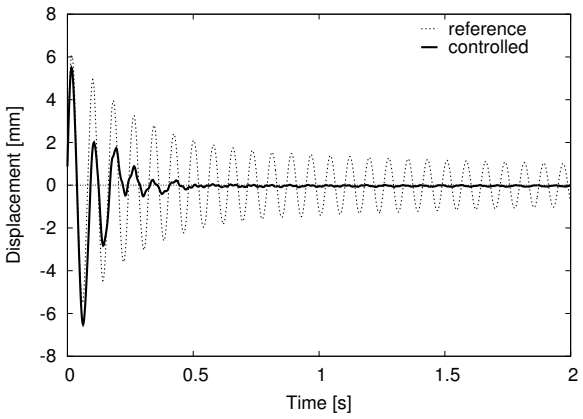
SEMI-ACTIVE SYSTEM FOR VIBRATION SUPPRESSION
PAR System

The semi–active system for vibration suppression, so called *PAR System* (**patent pending**) can be embedded in frame structures of adequate size in order to suppress its vibrations. *PAR Nodes* (cf. *PAR Node* brochure) replace chosen connections between structural members. A vibration sensor and a dedicated controller adjust stiffness of *PAR Nodes* in order to achieve superb vibration suppression ability without inserting external energy into the structure. Taking advantage of a novel control strategy, so called *Prestress Accumulation–Release (PAR)* Strategy over $95\,\%$ of the vibration amplitude can be attenuated in only few cycles of oscillation, by appropriate switching of *PAR Nodes* to compliant mode of operation.

PAR System performance on a demonstrator structure can be viewed in an attached video.



Example of attenuated structure.



Example response.

Main **advantages** of the *PAR System*:

- superb vibration suppression ability,
- no need for significant external energy input (as opposed to active, e.g. hydraulic systems),
- fail safe,
- no need to modify boundary conditions of the structure.

Possible **applications**:

- suppression of vibrations due to impact or other initial conditions,
- stabilization of equipment,
- isolation of a substructure from transient vibrations.

We are looking forward to cooperation!