Response to Reviewers Comments

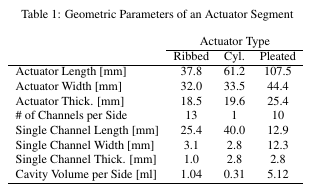
We are extremely grateful for your careful and thorough review of this paper. We greatly appreciate all the time you took to help us frame this paper in the context of the field.

**Reviewer 1:**

General Comments:

1. *“Details regarding the geometric parameters for the compared actuators are not provided, making the comparison less meaningful. The paper will benefit if these are clearly stated in the paper.”*

We really appreciate this feedback and completely agree. To address this, we have included the following table in Section 3.2.4, Comparative Characterization:



Furthermore, we added the following description to the text:

“Each segment's geometry and cavity volume is different, because every actuator segment was build for a different type of robot prototype in mind. The geometries and the resulting cavity volumes are listed in Table 1. The different cavity volumes and the characteristic deformation behavior of each morphology under pressurization requires significantly different volumetric displacements. Since this is a quasi-static process, fluid pressure and supply volume measurements can be used to determine the elastic potential fluid energy input into the actuation system. The actuation system consists of the elastomeric segment and the internal compressible transmission fluid. The elastic potential fluid energy serves as a comparative metric between the different actuator segment designs.”

Other Comments:

1. *“The organization can be improved. For instance 2.3.1 and 2.3.2 are not fabrication methods.”*

Thank you very much for bringing this to our attention. This was a formatting mistake on our part. We have corrected this by moving Sub-subsections 2.3.1 (Soft Locomotory Robots) and 2.3.2 (Soft Continuum Manipulators) from within Subsection 2.3 (Fabrication) to newly created Subsections 2.4 and 2.5, respectively. Also, for Subsection 2.5 we have included a footnote that indicates this subsection also appears in the author's related work [Andrew D Marchese and Daniela Rus. Design, kinematics, and control of a soft spatial fluidic elastomer manipulator. In International Journal of Robotics Research, 2015. (In revision)].

1. *“Sec. 2.1.3, line 3. It is stated "FEA is a bending actuator". FEA is not necessarily a bending actuator. There can be extension, twisting and other complex motions. Please reword.”*

This is a very good point, thank you for catching this statement. We’ve adjusted the wording as follows: “Although many motion primitives are achievable with a FEA (e.g., extending, contracting, twisting, and bending) in this work we primarily focus on actuators designed for bending.”

1. *“Sec. 3.2.4 Please provide pictures or schematics of experimental setup, especially for tip force measurements.”*