Dear Mr. Asad Arshad
Thanks for your contribution to the SCOPE conference.
Your paper has now been reviewed. The reviewers have indicated that your manuscript needs some minor revisions before being included in the SCOPE conference proceedings.
I really hope that you can suitably address the reviewers' comments given below. I invite you to revise and resubmit your manuscript by the set deadline.
Reviewer 1:
Comment 1: Figure 3, (c) Solution Flow Chart is missing in figure. I think that both optimal design and solution flowchart are embedded in one algorithm shown in Fig (b)

Fixed the typo.
Comment 2: Considering the text "The data in Table 3 has been compared to the FE displacement results obtained from COMSOL Time Dependent Study. The results presented in Table 4 shows that the solution expanded with D-Optimal method results in displacements with RMS Error less than 14%. w corresponding strain expansion RMS error is found to be less than 1%."

Why is Table 3 which considers clamped-clamped beam mixed with Table 4 which considers cantilever beam under impact.

This has been a typo. It is Table 3 which shows the RMS error less than 14%. Table 4 only shows the indexing scheme referring to the figure 6. Table 5 shows the RMS error values.

Comment 3: In the optimal design algorithm why did not you reconsider to introduce even GUYAN
method to reduce on the physical domain, the complete model up to a manageable number of degrees?

SEREP has already been demonstrated as a superior model order reduction and expansion compared to GUYAN in previous literatures. That is why it was not shown.
Reviewer 2:
General The paper describes methods for design and real-time monitoring (SHM – Structural Health Monitoring) of mechanical structures. Especially optimization of number of sensors and their positions for the SHM is described.
Comment 1: Abstract Reads “reduced sensors” should probably read “reduced number of sensors”

Fixed in the text.
Comment 2: Page 8, section “V.C.1. Displacement Expansion” The section contains two missing references.

There was no use of references in this section as it was only a discussion on the results.
Reflexion The paper has a clear focus upon quantifying cyclic mechanical loads consuming fatigue life in highly stressed, i.e. highly optimized components. The paper has examples (references) from wind turbine and space applications.
According to the personal opinion and experience of the reviewer, creating, validating and evaluating dynamic structural models of real-world piping systems and pressure vessel components is a complex task, where structural safety so far has been achieved through a combination of ductile materials, low loadings and stringent limitations of acceptable vibrations. Problems so far have been dominated by thermal loadings and environmentally assisted cracking.
There might be examples of failure types typical for NPP:s in Fatigue Assessment in Light Water Reactors for Long Term Operation: Good Practices and Lessons Learned, link: https://www.iaea.org/publications/15033/fatigue-assessment-in-light-water-reactors-for-long-term-operation-good-practices-and-lessons-learned