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THE POTENTIALS AND PRACTICAL APPLICATION OF NEW DEVELOPED DESIGN FACTORS FOR CYLINDRICAL SHELLS UNDER AXIAL COMPRESSION

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Highlights:

- Combination of reliability analysis and numerical imperfection sensitivity results in new design concept
- New improved shell buckling design factors in form of a simple analytic equation
- Results are validated by means of high-fidelity buckling experiments
- Influence of manufacturing specific imperfection signatures investigated
- Different boundary conditions and load introduction types analyzed
- Weight reduction potential of 20 % in comparison to current design standards shown by means of an interstage shell structure

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