



Computational Fluid Dynamics Analysis for the Orbiter Lh2 Feedline Flowliner

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 30 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. In phase II, additional inducer rotations are simulated in order to understand the root cause of the flowliner crack problem. CFD results confirmed that there is a strong unsteady interaction between the backflow regions caused by the LPFTP inducer and secondary flow regions in the bellows cavity through the flowliner slots. It is observed that the swirl on the duct side of the downstream flowliner is stronger than on the duct side of the upstream flowliner. Due to this swirl, there are more significant unsteady flow interactions through the downstream slots than those observed in the upstream slots. Averaged values of the local velocity at the slots were provided to the NESC-ITA flow physics acoustics team to guide them in designing the acoustics experiment. A parametric study was performed to compare the flow field in the flowliner area when one upstream slot and one corresponding downstream slot were enlarged. No significant differences were observed between the flow field obtained from the enlarged slot configuration when compared with the original configuration. More cases must be analyzed with various enlarged slot configurations to...



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