NASA/MSFC: Generalized Fluid ysstem simulation program

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# ABSTRACT

GFSSP is a general-purpose computer program for analyzing steady-state and time-dependent flow rate, pressure, temperature, and concentrations in a flow network. The program can model phase change, subsonic compressibility, fluid mixtures, conjugate heat transfer, and external body forces. GFSSP was developed at the Marshall Space Flight Center for flow analysis of rocket engine turbopumps and propulsion systems. A brief overview of GFSSP’s capabilities will be given. Then a demonstration will show how to construct a simple GFSSP model from scratch. Finally, existing models will be presented to showcase applications of GFSSP, including tank pressurization, waterhammer, priming, and propellant transfer line chilldown.