

Status of the Rotating Electric Field Ion Mass Spectrograph (REFIMS) and Its Use in the Space Environment

James H. Clemmons

The Aerospace Corporation

The Rotating Electric Field Mass Spectrograph (REFIMS) is presented and discussed. Its principle of operation is discussed and advantages and disadvantages of its use are presented. Its development path is traced, with particular attention placed on variants of the instrument. The improvements made possible by the advent of modern design tools, such as the SIMION computer code, are shown. A flexible prototyping system currently used in the development laboratory is shown and discussed, and results from the system are presented. A design developed for a sounding rocket flight in the Earth's ionosphere is described, and results from calibration runs are presented. Thoughts for future directions conclude the presentation.