

ELECTRON OPTICAL SIMULATIONS OF VARIABLE SENSITIVITY SYSTEMS FOR TOP HAT ELECTROSTATIC PLASMA ANALYSERS

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Electrostatic analysers are required to operate under a broad range of particle flux. The current approach to providing good sensitivity under all conditions is to build and fly multiple sensor heads, often with different geometric factors, e.g., the Cluster PEACE instrument. This significantly increases the required mass and power requirements for the instrument. A far more elegant solution would be a single sensor with a variable geometric factor which can ideally be controlled using electrostatic techniques. This paper describes three possible electrostatic methods for varying the geometric factor of a space plasma analyser and a discussion of the advantages and disadvantages of each method.

Electrostatic analyser, space plasma instrumentation, electron optics

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