

# Potential of a large dust grain in a collisionless plasma

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*Abstract—*

## I. INTRODUCTION

## II. RADIAL MOTION THEORY (ABR)

The ABR model is a radial motion theory derived by Allen, Boyd and Reynolds. It describes the equilibrium surface potential reached by a dust grain immersed in an infinite and stationary plasma.

Consider a spherical dust grain, of arbitrary size, immersed in this infinite plasma. Far from the surface we assume that the electron and ion densities are equal; known as quasi-neutrality.

## III. MODIFIED ORBITAL MOTION LIMITED (MOML)

## IV. SCEPTIC NUMERICAL FIT

## V. COMPARISON OF MOML AND ABR WITH SCEPTIC DATA

## VI. FLOWING SHEATH APPROXIMATION

## VII. CONCLUSION

## VIII. REFERENCES AND ACKNOWLEDGEMENTS

## IX. APPENDIX