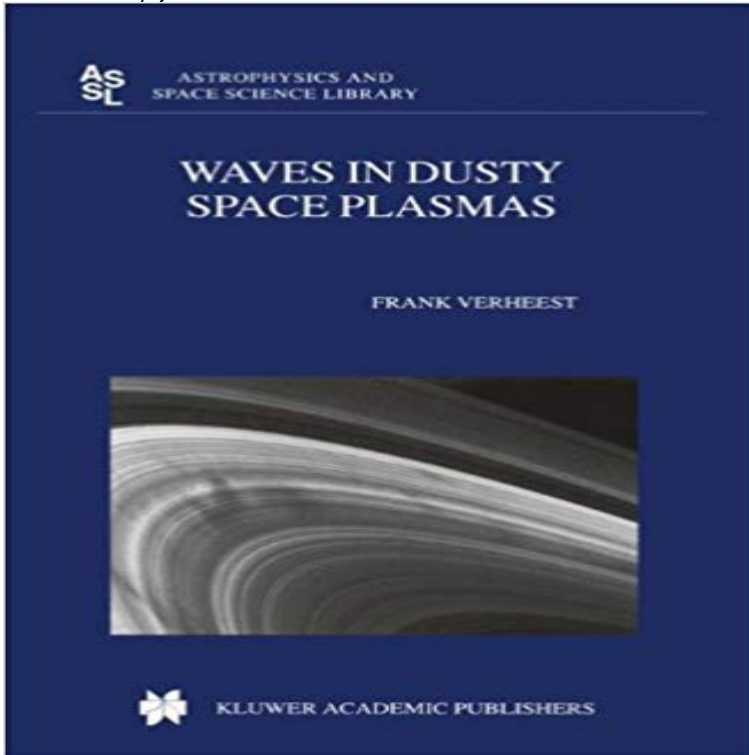


# Waves in Dusty Space Plasmas (Astrophysics and Space Science Library)



In this volume a thorough review is given of waves in dusty plasmas, a fascinating new domain combining plasmas and charged dust, two omnipresent ingredients of the Universe. Spokes and braids observed in the rings of Saturn cannot be explained by gravitation alone, but need the presence of charged dust. Other examples abound, as in zodiacal light, noctilucent clouds, comets and molecular clouds. After discussing charging mechanisms, supported by exciting new experiments, and space observations, the book describes extensions of known plasma modes covering the low frequencies typical for charged dust. Mixing detailed theoretical steps with summaries of expert contributions, a systematic multi-species treatment puts the literature in perspective, suitable also for newcomers. Typical complications like fluctuating dust charges, self-gravitational effects, and size distributions are dealt with, before ending with an outlook to future work and open questions. In this way, experts as well as interested newcomers will find a reliable guide, not just a compendium.

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