

# **Nonlinear Waves in Pulsar Winds**

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We study nonlinear electromagnetic waves in the context of pulsar winds. Using a combination of analytical and plasma simulation methods, we discuss which wave modes are likely to dominate in the wind, and which mode couplings and transitions are possible between the wind's inner (dense) and outer (dilute) regions. We also explore the fate of specific wave modes as they encounter the termination shock, and look at how the waves can affect the hot, radiative, observable plasma in the shock interior and the downstream medium.