

Review of Deterministic chaos in modulated multi-cell drifts of localized lower hybrid oscillations excited by high frequency waves in the ionosphere by Thomas B. Leyser

Changes needed to improve Spelling and Grammar”

Replace “derived of lower hybrid” with “derived for lower hybrid”

Replace “so called” with “so-called”

Replace “is frequency” with “is the frequency”

Replace “focusses” with “focuses”

Replace “have similar slope” with “have similar slopes”

Replace “are excited together” with “are excited simultaneously”

Replace “whether for sufficiently high pump power the nonlinear processes” with “whether, for sufficiently high pump powers, the nonlinear processes”

Replace “evidence of that” with “evidence that”

Replace “than the those” with “than those”

Replace “for a longer time period” with “for the longer time period”

Replace “an harmonic” with “a harmonic” in two places

Replace “paterns” with “patterns”

Replace “xy plane” with “x-y plane”

Replace “centre” with “center”

Replace “spatial scales transverse” with “spatial scale-lengths transverse”

Replace “centre” with “center”

Replace “parametric fourwave interaction” with “parametric, four-wave interaction”

Replace “more narrow” with “narrower”

Replace “asymmmetric” with “asymmetric”

Replace “considered skewed Lorentzians” with “considered as skewed Lorentzians”

For the theoretical discussion to be understood, a table is needed for the 4-wave modes, densities and velocities. The table could be:

Table I: Four-Wave Modes Responsible for the Broad Upshifted Maximum (BUM)

Mode	Density	Velocity	frequency	Conditions
Background (Ambient)	n_s	v_s	$f_s = 0$	$v_s = 0$
Electromagnetic (EM)	n_0	v_0	f_0	$f_0 = \text{Pump Frequency}$
Electron Bernstein (EB)	n_1	v_1	f_1	$f_1 \leq s f_{ce}$
Upper Hybrid (UH)	n_2	v_2	f_2	$f_2 = f_{BUM}, f_2 \geq s f_{ce}$
Lower Hybrid (LH)	n_3	v_3	f_3	$f_3 = f_0 - f_1 = f_2 - f_0$
High Frequency (HF)	n_h	v_h		$n_h = n_0 + n_1 + n_2$ $v_h = v_0 + v_1 + v_2$

This type of table provides a reference for the reader to keep a record of each mode. The term f_{ce} is recommended to distinguish from f_{pe} , the electron plasma frequency.

The paper provides a good simulation of deterministic chaos using the basic non-linear equations for a plasma in a magnetic field. The link to observations gives the paper more creditability than at theory only paper. Publication is recommended after the above changes are implements.