Session EM - Waves II.
MIXED session, Sunday afternoon, November 21
Whidbey, Westin Seattle

[EM.004] A coupled system of long wave - short waves with a mismatch in group velocities

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A resonance among long and short waves will occur if the group velocity of the short wave matches the phase velocity of the long wave. A weakly nonlinear system of long and two (or more) short waves will be studied. A slight detuning, or a difference in the group velocities, will be present. Coupled, nonlinear evolution equations will be derived for a realistic oceanic stratification profile. An exact 1-soliton solution is derived by the Hirota bilinear method for special cases of the parameters. The evolution of an arbitrary solitary pulse will be studied by numerical methods. The Hopscotch method, with both explicit and implicit components, will be employed.