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*A mathematical description of internal gravity waves forced by topography*

Waves in fluids can be simulated with mathematical models based on Newton's laws of motion, with the waves being represented as sinusoidal functions superimposed on a steady basic flow. In geophysical fluid dynamics, numerical and analytical solutions of such mathematical models help us to understand the behaviour of waves in the atmosphere and oceans. In my research I am using analytical methods, such as multiple scaling and asymptotic expansions, to study the nonlinear dynamics of gravity waves forced by topography, such as an isolated mountain or a mountain range. In my talk I will explain how the solutions are derived and talk about their physical interpretation. (This is joint work with L.J.Campbell.)