



Exact analytic self-similar solution of an internal wave attractor field

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In a uniformly-stratified fluid, we here show how to derive the exact spatial structure of a monochromatic internal gravity wave field in a trapezoidal fluid domain analytically. The symmetry-breaking shape of the fluid domain leads to a wave attractor. This is the first time that an analytic description of a wave attractor is given. This finding is remarkable because it requires solving an ill-posed Cauchy problem for the wave equation that exhibits a self-similar spatial structure. This solution offers a stepping stone for constructing self-similar spatial patterns in related fields characterized by wave attractors.