

**Faraday waves in Bose-Einstein condensates,
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Traditional Faraday waves appear in a layer of liquid that is shaken vertically. These patterns can take the form of horizontal stripes, close-packed hexagons, or even squares or quasiperiodic patterns. Faraday waves are commonly observed as fine stripes on the surface of wine in a wineglass that is ringing like a bell when periodically forced.

Motivated by recent experiments on Faraday waves in Bose-Einstein condensates we investigate both analytically and numerically the dynamics of cigar-shaped Bose-condensed gases subject to periodic modulation of the strength of the transverse confinement's trap. We offer a fully analytical explanation of the observed parametric resonance yielding the pattern periodicity versus the driving frequency. These results, corroborated by numerical simulations, match extremely well with the experimental observations.