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Optical Sciences
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- Ultrafast optical technology has led to generation of single-cycle electromagnetic pulses with bandwidths are comparable to the center frequency!
- Technology has needed new theoretical description of such electromagnetic waves.
- New theoretical approach has lead to exact solutions of Maxwell's equations that correctly describe the spatio-temporal evolution of focused single-cycle electromagnetic pulses.
- Implications for both terahertz pulses and few-cycle femtosecond laser pulses.
- Now investigating the nonlinear interactions of these single-cycle pulses.