

## GROUP VELOCITY OF GAUSSIAN BEAMS

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### S u m m a r y

The group velocity of a short light pulse shaped in space in a form of a Gaussian beam is analyzed. The pulse radiation is represented by the spectral decomposition, and the integration of monochromatic components demonstrates the retardation of a Gaussian-beam pulse with respect to a plane-wave reference pulse. The resulting pulse velocity is not uniform and attains  $c$  at the far field, thus providing some excess over  $c$  at the part of its optical path. The effect is caused by the influence of a wavelength-dependent Gouy phase shift.