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Averaging effects in quasi-linear transmission regime. Preliminary report.

The problem of propagation of optical pulses in light wave communication systems with dispersion management is considered. The linear dynamics is dispersive and periodic, while nonlinearity acting on a longer scale may distort the pulses. It has been shown before both experimentally and numerically that shorter pulses survive better nonlinear distortions. We provide some explanation of the phenomenon for a simple model problem of infinitely many identical short pulses in the limit of vanishing pulse width. (Received February 12, 2006)