



Experimental and theoretical study of higher-order nonlinearities in chalcogenide glasses

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Résumé en anglais	We investigate experimentally and theoretically the nonlinear properties of two distinct chalcogenide glasses. Nonlinearities are measured through a spatially resolved Mach-Zehnder interferometer. It is shown that the resulting nonlinear index coefficient cannot be correctly described with the usual cubic model. A more convenient theory is developed assuming a medium with two-photon nonlinear absorption and both cubic (n^2) and quintic (n^4) nonlinear index variations. The resulting closed-form expression for the effective nonlinear index coefficient allows to extract the cubic and quintic index coefficients.
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Liens

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- [2] [http://okina.univ-angers.fr/publications?f\[author\]=8659](http://okina.univ-angers.fr/publications?f[author]=8659)
- [3] <http://okina.univ-angers.fr/herve.leblond/publications>
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=8592](http://okina.univ-angers.fr/publications?f[author]=8592)
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- [6] <http://okina.univ-angers.fr/francois.sanchez/publications>
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- [8] [http://dx.doi.org/10.1016/S0030-4018\(03\)01341-5](http://dx.doi.org/10.1016/S0030-4018(03)01341-5)

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