

Abstract Submitted
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Analysis of Laser Breakdown Data ROGER BECKER, Air Force Research Labs — Experiments on laser breakdown for ns pulses of 532 nm or 1064 nm light in water and dozens of simple hydrocarbon liquids are analyzed and compared to widely-used models and other laser breakdown experiments reported in the literature. Particular attention is given to the curve for the probability of breakdown as a function of the laser fluence at the beam focus. Criticism is made of the naïve forms of both “avalanche” breakdown and multi-photon breakdown. It appears that the process is complex and is intimately tied to the chemical group of the material. Difficulties with developing an accurate model of laser breakdown in liquids are outlined.

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