

Fick's second law for cylindrical boundary conditions was used to calculate the normalised refilling signal [17]. If we approximate the laser spot cross section by a disk of the same area, the relation is given by the formula [18]

$$S(t) = 1 - 2 \int_0^\infty \frac{J_1^2(ua_0)}{u} \exp(-Dtu^2) du, \quad (1)$$

where a_0 is the radius of the circular area and $J_1(ua_0)$ is the Bessel function of the first kind of order one. The solid lines in Fig. 1 represent the results of fitting the experimental data with the expression for $S(t)$. A relatively good agreement is