Direct Nonlinear Regression

If you are a mötorhead compu-stat monster, or just have access to good software (like *Mathematica*), you may regress directly, fitting the data,

$$\{(t_i, Y_i)\}_{i=1} N,$$

to the solution (4),

$$Y = \frac{KY_0 e^{rt}}{K + Y_0 (e^{rt} - 1)},$$

to determine r and K. You can either put your initial observation for Y_0 in, or let it be a regression parameter and check it against your actual observed value to provide some measure of validation.

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