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/*=====
=====*/
/*This is the function funcs() called by MRQMIN.C */
/*MRQMIN.C is found on page 685 of "Numerical Recipes in C"by
Press et al. */
void funcs(float time,float a[],float *F,float dyda[])
{
int fact(int);          /*A factorial finder*/
int n;                  /*The index of the series (equation $$ of
Brown et al.)*/
float D,beta;          /*The diffusion coefficient and the bleach
depth*/
float A,B,C,E;        /*Four terms in the calculation*/
float der_D;          /*One of the n terms that sum to dyda[1], the
derivative*/
                        /* of eq. $$ with respect to D */
float der_b;          /*One of the n terms that sum to dyda[2], the
derivatice*/
                        /* of eq. $$ with respect to beta*/
/*Other (global) parameters;
MAX The number of terms in the series
omega The 1/e radius of the excitation PSF
time Time in */
/*-----
-----*/
/*Initialize the intensity, derivatives, and series index*/
*F=0;
der_D=0;
der_b=0;
n=0;
/*Change the vector a to the more recognizable D and beta*/
D=a[1];
beta=a[2];
/*-----
-----*/
/*-----
-----*/
/*Calculate the n terms of eq. $$ and its derivative with respect
to D and beta*/
while(n < MAX)
{
A=(float) (pow((- (double)beta),((double)n)) / fact(n));
B=1 / (1+ ((float)n)*(1+8*time*D/(omega*omega)) );
C=8*time/(omega*omega);
}
}

```