

```

127 //Main function
128 void kinematic_model (Src_hyp *ringp, Cube_p *cubep, Gdat *sr, Gdat *ring, Opt *op, PetscMPIInt rank)
129 {
130   Rings *rad8, *rad1;
131   Ell *ell;
132   int i, k, din_xcubep->din_x, din_ycubep->din_y, dinr;
133   double dyncubep->dy, dxcubep->dx;
134   double freqcubep->frequency;
135   double sigma_strcubep->sigma;
136   double tot_md;
137   double tot_data=0;
138   double *ell1;
139
140   rad8 = (Rings) calloc(1, sizeof(Rings));
141   ell=(Ell) calloc(1, sizeof(Ell));
142
143   ringp->radsep2=0;
144   ringp->nrr=round(ringp->rmax/ringp->radsep);
145
146   //initialize the rings
147   rad8->orad1 = (double) calloc(ringp->nrr, sizeof(double));
148   rad8->svrot = (double) calloc(ringp->nrr, sizeof(double));
149   rad8->wdisp = (double) calloc(ringp->nrr, sizeof(double));
150   rad8->wexp = (float) calloc(ringp->nrr, sizeof(float));
151   rad8->opa = (float) calloc(ringp->nrr, sizeof(float));
152   rad8->inc = (double) calloc(ringp->nrr, sizeof(double));
153   rad8->phi = (float) calloc(ringp->nrr, sizeof(float));
154   rad8->x0 = (double) calloc(ringp->nrr, sizeof(double));
155   rad8->dens = (double) calloc(ringp->nrr, sizeof(double));
156   rad8->nv = (int) calloc(ringp->nrr, sizeof(int));
157
158   //Building of the rings
159   rad8->nrr=ringp->nrr;
160
161 //Main function
162 void kinematic_model (Src_hyp *ringp, Cube_p *cubep, Gdat *sr, Gdat *ring, Opt *op, PetscMPIInt rank)
163 {
164   Rings *rad8, *rad1;
165   Ell *ell;
166   int i, k, din_xcubep->din_x, din_ycubep->din_y, dinr;
167   double dyncubep->dy, dxcubep->dx;
168   double freqcubep->frequency;
169   double sigma_strcubep->sigma;
170   double tot_md;
171   double tot_data=0;
172   double *ell1;
173
174   rad8 = (Rings) calloc(1, sizeof(Rings));
175   ell=(Ell) calloc(1, sizeof(Ell));
176
177   ringp->radsep2=0;
178   ringp->nrr=round(ringp->rmax/ringp->radsep);
179
180   //initialize the rings
181   rad8->orad1 = (double) calloc(ringp->nrr, sizeof(double));
182   rad8->svrot = (double) calloc(ringp->nrr, sizeof(double));
183   rad8->wdisp = (double) calloc(ringp->nrr, sizeof(double));
184   rad8->wexp = (float) calloc(ringp->nrr, sizeof(float));
185   rad8->opa = (float) calloc(ringp->nrr, sizeof(float));
186   rad8->inc = (double) calloc(ringp->nrr, sizeof(double));
187   rad8->phi = (float) calloc(ringp->nrr, sizeof(float));
188   rad8->x0 = (double) calloc(ringp->nrr, sizeof(double));
189   rad8->dens = (double) calloc(ringp->nrr, sizeof(double));
190   rad8->nv = (int) calloc(ringp->nrr, sizeof(int));
191
192   //Building of the rings
193   rad8->nrr=ringp->nrr;
194
195 //Main function
196 void kinematic_model (Src_hyp *ringp, Cube_p *cubep, Gdat *sr, Gdat *ring, Opt *op, Pet
197 {
198   Rings *rad8, *rad1;
199   Ell *ell;
200   int i, k, din_xcubep->din_x, din_ycubep->din_y, dinr;
201   double dyncubep->dy, dxcubep->dx;
202   double freqcubep->frequency;
203   double sigma_strcubep->sigma;
204   double tot_md;
205   double tot_data=0;
206   double *ell1;
207
208   rad8 = (Rings) calloc(1, sizeof(Rings));
209   ell=(Ell) calloc(1, sizeof(Ell));
210
211   ringp->radsep2=0;
212   ringp->nrr=round(ringp->rmax/ringp->radsep);
213
214   //initialize the rings
215   rad8->orad1 = (double) calloc(ringp->nrr, sizeof(double));
216   rad8->svrot = (double) calloc(ringp->nrr, sizeof(double));
217   rad8->wdisp = (double) calloc(ringp->nrr, sizeof(double));
218   rad8->wexp = (float) calloc(ringp->nrr, sizeof(float));
219   rad8->opa = (float)

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