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| --- |
| ;Computer lab 4  METHOD RK4  STARTTIME = 0  STOPTIME = 24  DT = 0.02  Rin = 10.67  kout = 1  t0 = 0  {24 h cycle}  amp24 = 0.25  peak24 = 12  tau24 = 24  om24 = 2\*PI/tau24  circ24 = amp24\*cos((time-peak24)\*om24)  {12 h cycle}  amp12 = 0.125  peak12 = 5  tau12 = 12  om12 = 2\*PI/tau12  circ12 = amp12\*cos((time-peak12)\*om12)  {6 h cycle}  amp6 = 0.125  peak6 = 2.5  tau6 = 6  om6 = 2\*PI/tau6  circ6 = amp6\*cos((time-peak6)\*om6)  d/dt(A) = Rin\*(1 + circ24 + circ12) - kout\*A  {Analytical solution for t=0}  B = Rin/kout + amp24\*Rin/(kout^2 + om24^2)\*(kout\*cos((t0 - peak24)\*om24)+om24\*sin((t0-peak24)\*om24))  C = amp12\*Rin/(kout^2+om12^2)\*(kout\*cos((t0-peak12)\*om12)+om12\*sin((t0-peak12)\*om12))  D = amp6\*Rin/(kout^2+om6^2)\*(kout\*cos((t0-peak6)\*om6)+om6\*sin((t0-peak6)\*om6))  init A = (B+C) ;To include the 6 h cycle, add D |