```
C***********************************************************************

          SUBROUTINE ITECHECK

C***********************************************************************

c     keeps track of cpu time consumption
c     size of impactor lists
c     max pre-impact dist leading to an impactd


          INCLUDE 'ssbox.inc'


          WRITE(IDEV6,*) '*******************************************'

          CALL CPU(TIME2)
          CPU_TOT=TIME2-TALKU
          DCPU=CPU_TOT-CPU_TOT0
          DTSIM=TIME-TIMEOLD

C         FREK = IMPACTS/PART/ORBIT


          colls=coll-collolde

          FREK=COLLS/DTSIM*2./LKM*PERIOD

C ************************************************************

c  CPU TIMES FOR DIFFERENT PORTIONS OF THE CODE

C ************************************************************

C ************************************************************
C---------------------------------------
C  after the previous call to itecheck

c     nearby pairs
          DTR1=(CPU_LIM-CPU_LIM0)/DCPU*100.

c     borders
          DTRB=(CPU_RET-CPU_RET0)/DCPU*100.

c     impacts
          DTD3=(CPU_INT-CPU_INT0)/DCPU*100.
          DTSAV=(CPU_SAV-CPU_SAV0)/DCPU*100.
          DTPA=(CPU_POTA-CPU_POTA0)/DCPU*100.
          DTPB=(CPU_POTB-CPU_POTB0)/DCPU*100.

c     selfgravity
          DTGR=(CPU_SG-CPU_SG0)/DCPU*100.

c     total counted
          dtsub=dtr1+dtpa+dtpb+dtrb+dtd3+dtgr+dtsav

C---------------------------------------
C  cumulative from the beginning of the simulation


          TR1=(CPU_LIM)/CPU_TOT*100.
          TPA=(CPU_POTA)/CPU_TOT*100.
          TPB=(CPU_POTB)/CPU_TOT*100.
          TRB=(CPU_RET)/CPU_TOT*100.
          TD3=(CPU_INT)/CPU_TOT*100.
          TGR=(CPU_SG)/CPU_TOT*100.
          TSAV=(CPU_SAV)/CPU_TOT*100.

          tsub=tr1+tpa+tpb+trb+td3+tgr+tsav

          orb=time/period
          write(idev6,*) ' ORB,COLL ',orb,coll

          WRITE(IDEV6,769) DCPU,CPUTOT,DTSAV,TSAV,
     +    DTR1,TR1,DTPA,TPA,DTPB,TPB,DTRB,TRB,
     +    DTD3,TD3,DTGR,TGR,dtsub,tsub

 769      FORMAT( ' DT:SYS = ',F10.3,' TOT:SYS = ',F10.3,/
     +            ,'   SAV = ',F10.3,'   SAV = ',F10.3,/
     +            ,'   RJ1 = ',F10.3,'   RJ1 = ',F10.3,/
     +            ,'   PA = ',F10.3,'   PA = ',F10.3,/
     +            ,'   PB = ',F10.3,'   PB = ',F10.3,/
     +            ,'   RET = ',F10.3,'   RET = ',F10.3,/
     +            ,'   INT = ',F10.3,'   INT = ',F10.3,/
     +            ,'   SG = ',F10.3,'   SG = ',F10.3,/
     +            ,' SUBTOT = ',F10.3,' SUBTOT = ',F10.3,/)

          TIMEOLD=TIME
          collolde=coll
```

```fortran
          CPU_TOT0=CPU_TOT
          CPU_LIM0=CPU_LIM
          CPU_RET0 =CPU_RET
          CPU_POTA0=CPU_POTA
          CPU_POTB0=CPU_POTB
          CPU_INT0 =CPU_INT
          CPU_SG0 =CPU_SG
          CPU_SAV0 =CPU_SAV

C ***********************************************************

C        POTENTIAL IMPACT PAIR LISTS

C ***********************************************************

c          IXL  = number of calls since last itecheck
c          IXMIN,IXMAX _ min and max number of potential pairs
c          IXK = mean number of

          IF(IXL.NE.0) IXK=IXS/IXL
          WRITE(IDEV6,*)' IXL,IXMIN,IXK,IXMAX'
          WRITE(IDEV6,760) IXL,IXMIN,IXK,IXMAX

 760      FORMAT(4I12)
 762      FORMAT(I6,3F12.4)

          ero1k=0.
          if(ero1l.gt.0) ERO1K=ERO1S/ERO1L

c     NSAV=current number of ongoing impacts
c     ALFMAX= max overlap depth in current impacts
c     ERO1MAX = max pre-step distance still leading to impact
c     RAJA1 = current limiting radii for near pairs

          WRITE(IDEV6,*)' NSAV, ALFMAX, ERO1MAX, RAJA1'
          WRITE(IDEV6,762)  NSAV,ALFMAX,ERO1MAX,RAJA1



C******** CHANGE LIMIT-DISTANCES

          IF(ERO1MAX.GT..5*RAJA1) THEN
             RAJA1=3.*ERO1MAX
          ELSE
             RAJA1=2.*ERO1MAX
          ENDIF
          IF(RAJA1.LT.RAJA1MIN) THEN
             RAJA1=RAJA1MIN
          ENDIF
          IF(RAJA1.GT.RAJA1MAX) THEN
             RAJA1=RAJA1MAX
          ENDIF

C******** OVERLAPPS,BORDER-CROSSINGS AND SLOW IMPACTS
c         MSIS = overlaps since the beginning of run
c         npa,npy = radial crossings
c         nha,nhy = tangential crossings

          WRITE(IDEV6,*)' MSIS,NPA,NPY,NHA,NHY'
          WRITE(IDEV6,763) MSIS,NPA,NPY,NHA,NHY


c     slow impacts
c          v_normal < f*v_critical
c          f=0.5,1.,2.,5.,10.
          WRITE(IDEV6,*)' NHIDAS: 0.5 1  2  5  10'
          WRITE(IDEV6,763) NHIDAS05,NHIDAS,NHIDAS2,NHIDAS5,NHIDAS10
          WRITE(IDEV6,*) ' '

 763      FORMAT(6I12)


          IXL=0
          IXS=0
          IXMIN=100000
          IXMAX=0

          ERO1MIN=100000.
          ERO1MAX=0.
          ERO1S=0.
          ERO1L=0.


          RETURN
          END
```