Laboratorio di Calcolo Numerico
Laboratorio 3: Algoritmi stabili e instabili
Soluzioni

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Dispense:
http://www.math.unipd.it/∼putti/teaching/calcolo_ambientale/index.html

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Schema instabile

```
 1: program instabile
 2: implicit none
 3: integer :: nmax,n         ! Variabili intere
 4: real*8 :: intn,intnm1        ! Variabili reali
 5: open(10,file='ris_instabile.dat')
 6: nmax = 20
 7: n = 0
 8: intn = 1.d0 - exp(-1.d0)
 9: write(10,'(i6,e15.6)') n,intn
10: do while (n .lt. nmax)
11:     n = n + 1
12:     intnm1 = intn
13:     intn = 1.d0 - n * intnm1
14:     write(10,'(i6,e15.6)') n,intn
15: end do
16: close(10)
17: end program instabile
```

Schema stabile

```
 1: program stabile
 2: implicit none
 3: integer :: nmax,n         ! Variabili intere
 4: real*8 :: intn,intnm1         ! Variabili reali
 5: open(10,file='ris_stabile.dat')
 6: nmax = 20
 7: n = nmax
 8: intn = 0.d0
 9: write(10,'(i6,e15.6)') n,intn
10: do while (n .gt. 1)
11:     intnm1 = (1.d0 - intn) / float(n)
12:     n = n - 1
13:     intn = intnm1
14:     write(10,'(i6,e15.6)') n,intn
15: end do
16: close(10)
17: end program stabile
```