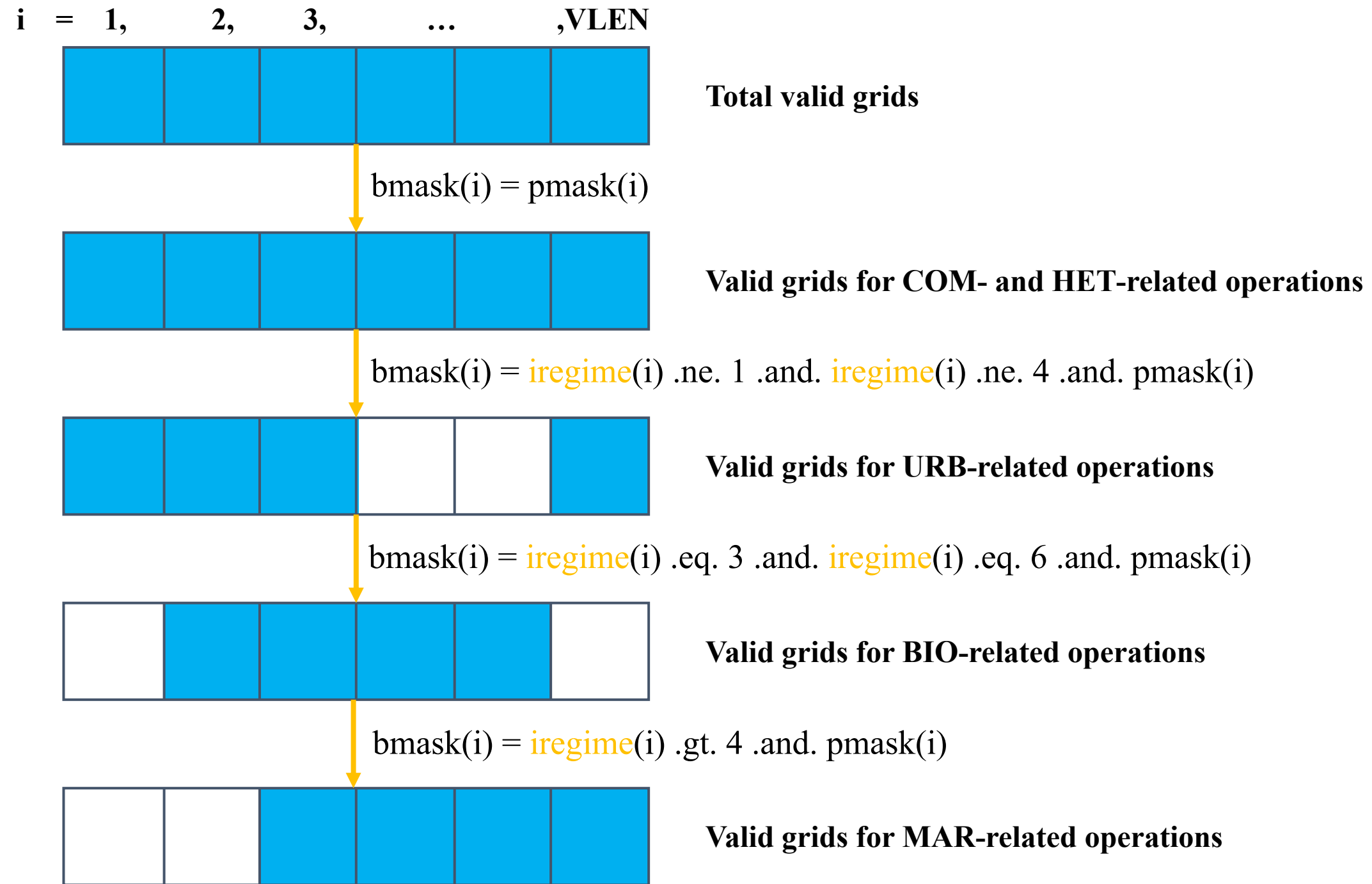


(a)**(b)****Goto** (1,2,3,4,5,6) **iregime** !different branches of chemical schemes

```

1      call ODE_COM(***) !when iregime equals 1
      call ODE_HET(***)
      do i=1,igas
        total_p(i)= p_com(i) + p_het(i)+emit(i) ! Return the results of above functions
        total_l(i) = l_com(i) + l_het(i)
      end do

2      call ODE_COM(***) !when iregime equals 2
      call ODE_HET(***)
      call ODE_URB(***)
      do i=1,igas
        total_p(i)= p_com(i) + p_het(i) + p_urb(i)+emit(i)
        total_l(i) = l_com(i) + l_het(i) + l_urb(i)
      end do

```

(c)

call ODE_COM(***) !no branches, all processes are integrated.

call ODE_HET(***)

do ig=1,igas

do i=1,VLEN

total_p(i, ig)= p_com(i, ig) + p_het(i, ig) + emit(i, ig) ! Return the results of above functions

total_l(i, ig) = l_com(i, ig) + l_het(i, ig)

end do

end do

if (has_urb) then !whether the URB scheme

do i=1,VLEN

bmask(i) = iregime(i) .ne. 1 .and. iregime(i) .ne. 4 .and. pmask(i)

end do

call ODE_URB(***) !call the function for all grids

do ig=1,igas

do i=1,VLEN

if (bmask(i)) then

total_p(i, ig)= total_p (i, ig) + p_urb(i, ig) ! Return the results of ODE_URB for valid grids

total_l(i, ig) = total_l(i, ig) + l_urb(i, ig)

end if

end do

end do

end if