$$f\_k(i,j) = 0.25*\{[f(i,j+1) + f(i,j-1)] + [f(i+1,j) + f(i-1,j)]\}$$

At j=nyp → f(:,nyp+1)

At j=1 → f(:,0)

Elements are missing on each MPI process

**(a)**

y

P2

f(:,1)

f(:,nyp+1)

P1

nyp

f(:,0)

P0

f(:,nyp)

x

**(b)**

nyp +1

P1

0

1 → nx