$$\hat{m}_j(k_x, k_y) = \int_y \int_x C_j(x,y)\, m(x,y)\, e^{-i2\pi(k_x \cdot x + k_y \cdot y)}\, dx\, dy$$

$$\hat{m}_j(k_y) = \int_y C_j(y)\, m(y)\, e^{-i2\pi(k_y \cdot y)}\, dy$$

$m(y)$ ; image

$C_j(y)$ ; coil sensitivity ($j$th) , $j = 0, \cdots, L-1$

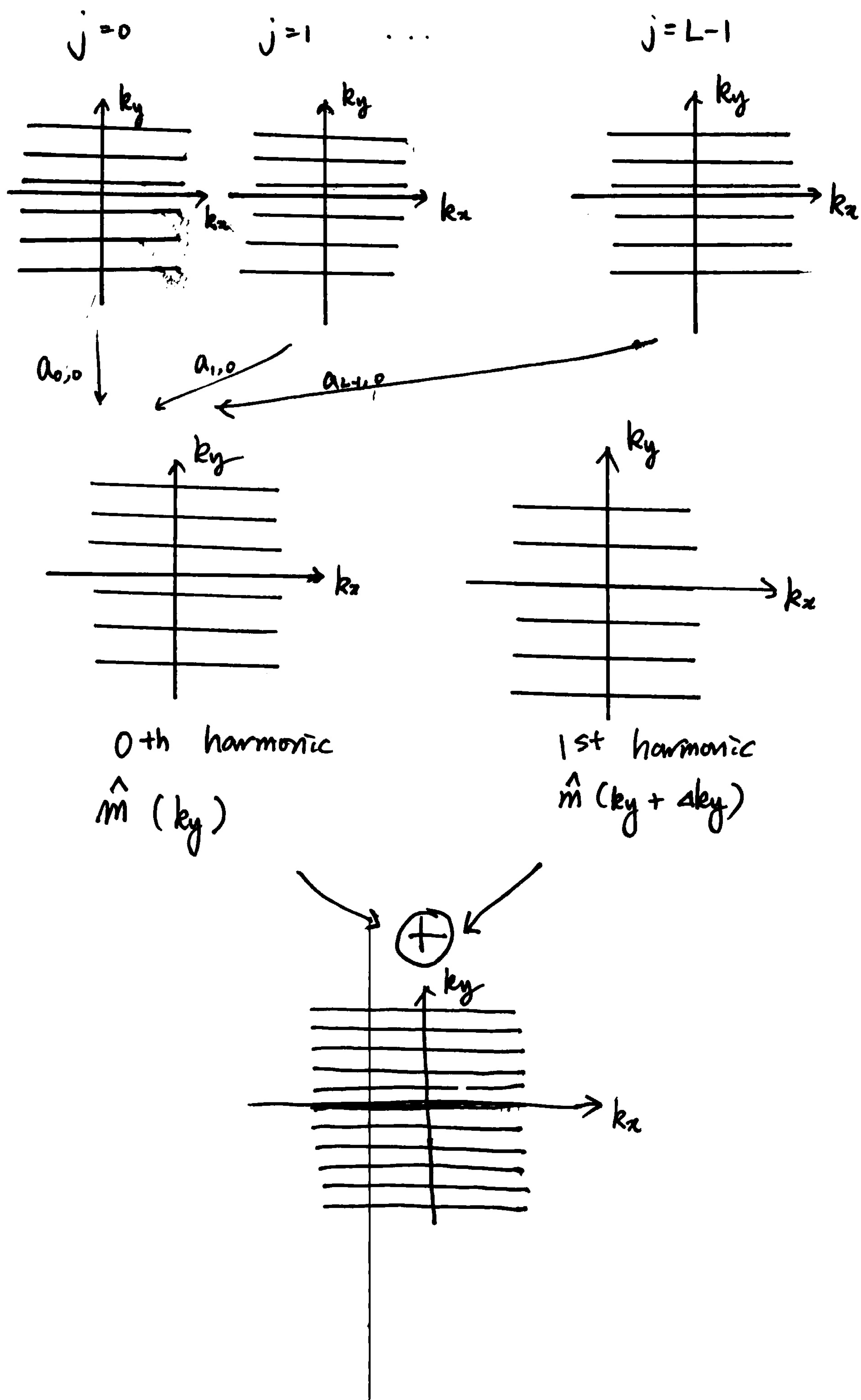
$$e^{-i2\pi\, m \cdot \Delta k_y \cdot y} = \sum_{j=0}^{L-1} a_{j,m}\, C_j(y)$$

$$\hat{m}(k_y + m\Delta k_y) = \int_y m(y)\, e^{-i2\pi(k_y \cdot y + m \cdot \Delta k_y \cdot y)}\, dy$$

$$= \sum_{j=0}^{L-1} a_{j,m} \underbrace{\int_y C_j(y)\, m(y)\, e^{-i2\pi k_y \cdot y}\, dy}_{\hat{m}_j(k_y)}$$

$$= \sum_{j=0}^{L-1} a_{j,m} \cdot \hat{m}_j(k_y)$$

$$\boxed{\hat{m}(k_y + m\Delta k_y) = \sum_{j=0}^{L-1} a_{j,m}\, \hat{m}_j(k_y)}$$



j = 0
j = 1
. . .
j = L-1
ky
kx
a0,0
a1,0
aL-1,0
0th harmonic
m̂ (ky)
1st harmonic
m̂ (ky + Δky)