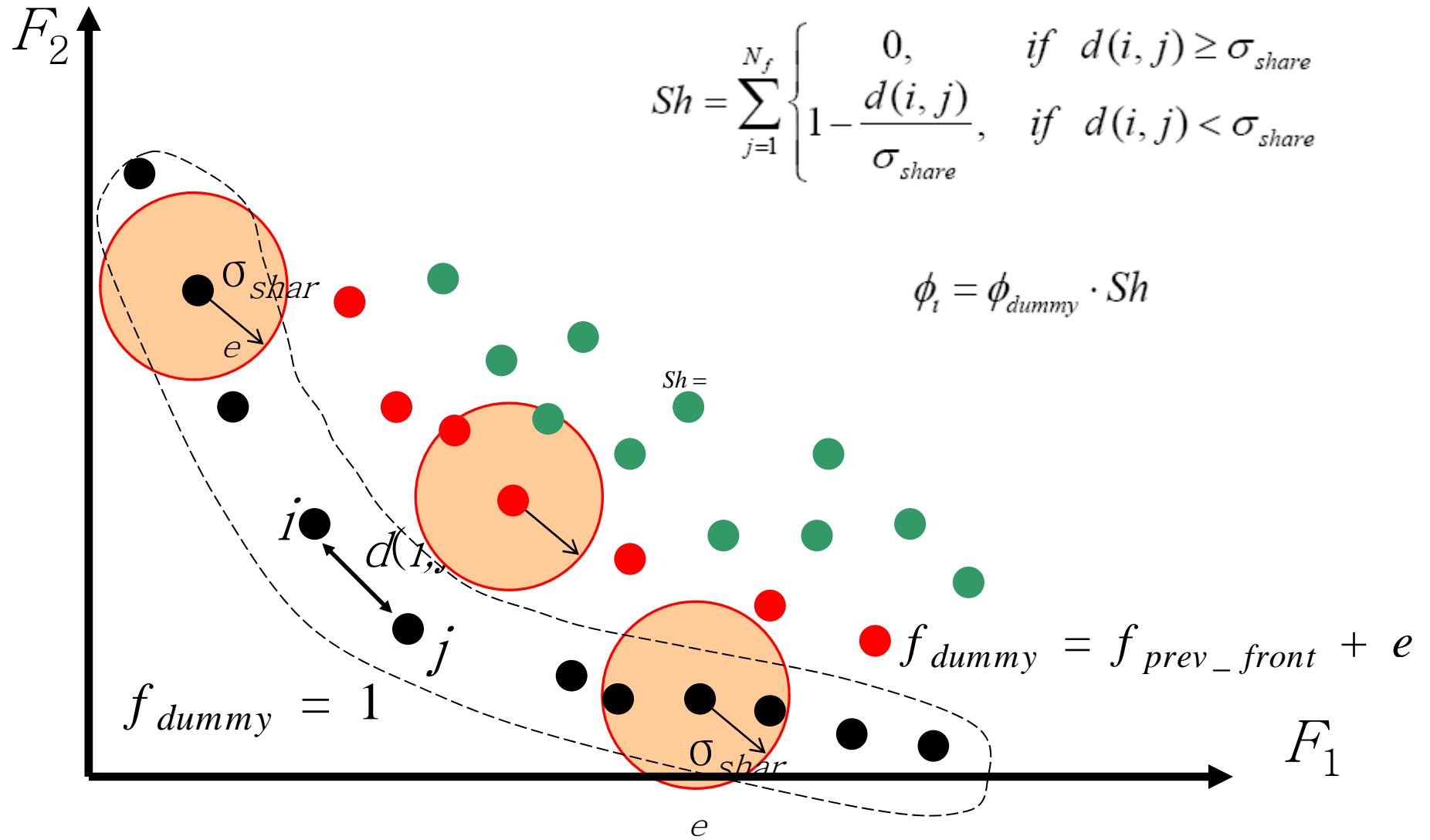
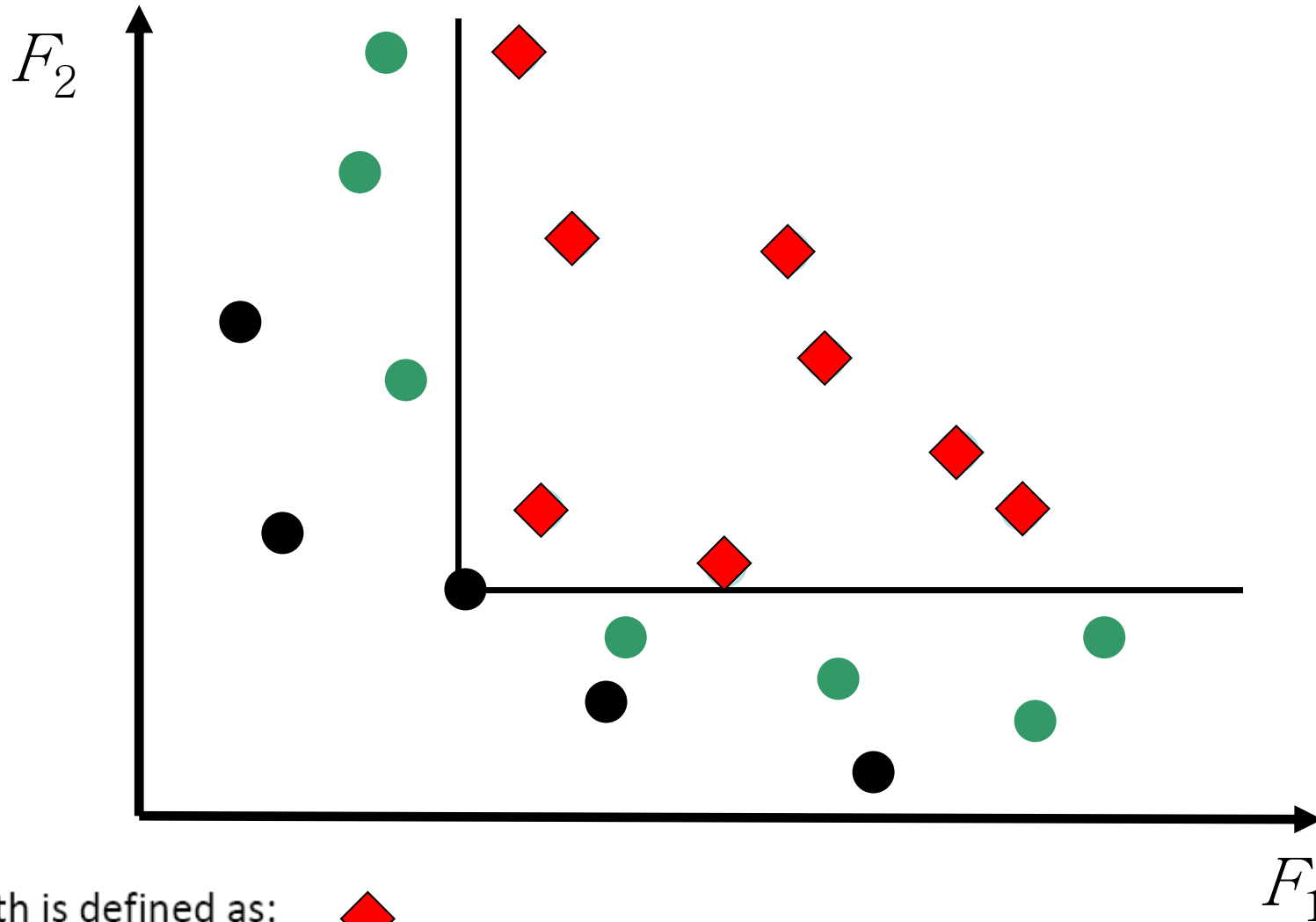


ϕ computation – NSGA(Niching)



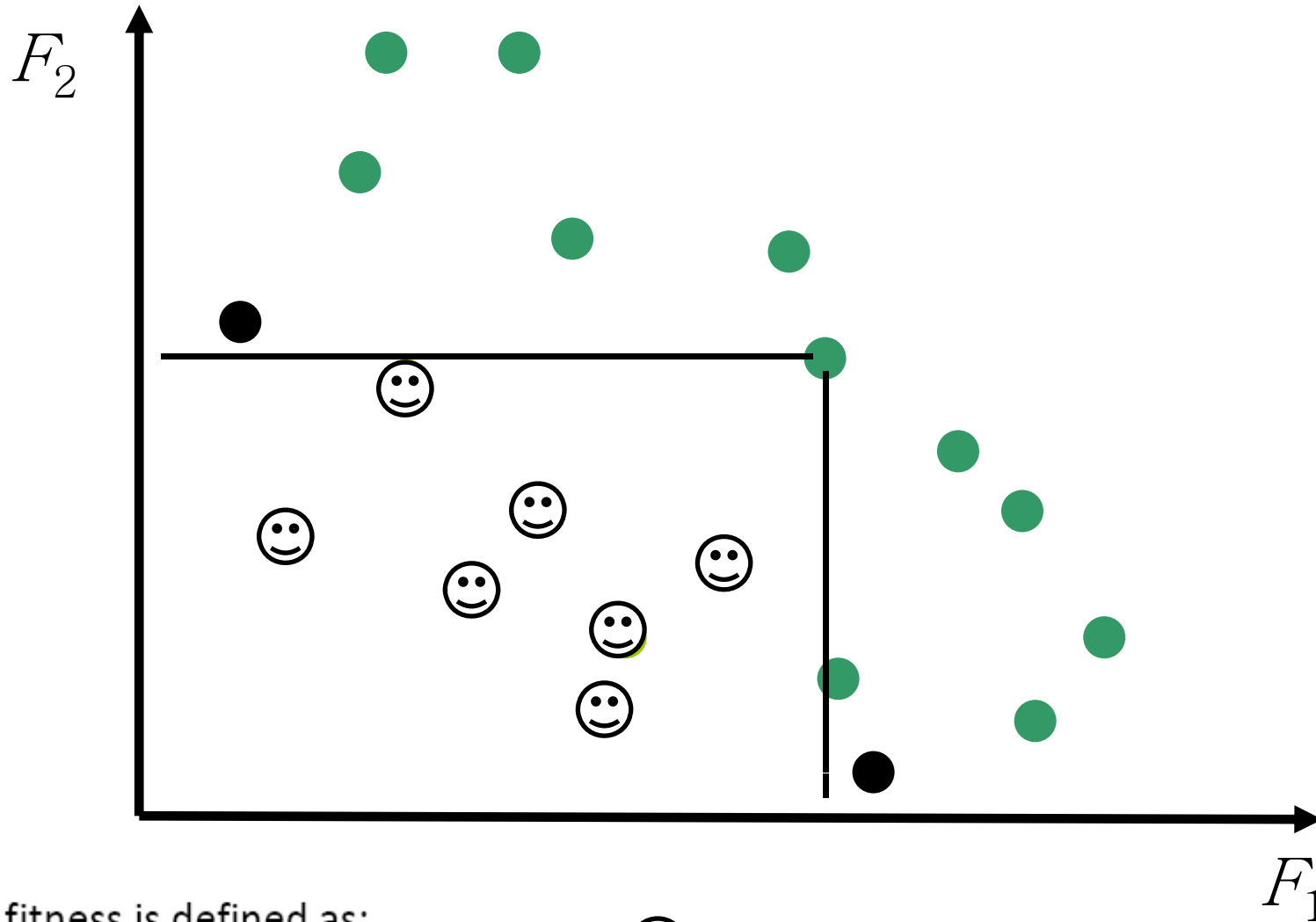
ϕ computation – SPEA – step 1



Strength is defined as:

$$\text{strength}(\bar{F}) = \frac{\text{Number of Dominated}}{\mu + \lambda + 1} \in [0,1)$$

φ computation – SPEA – step 2



Raw fitness is defined as:

$$rawfitness(strength) = 1 + \sum_{\text{dominating} > 1} \text{strength}(\text{smiley face})$$

