

We want to find minimum point of the  $\{ F(x) = \sum_{i=0}^{n-1} x^2 \}$  function in following condition:

- 1) Implementation of ES(1+1) algorithm  
(Normal distribution has been used to generate random numbers for mutation)
- 2) Implementation of ES(1+1) with the rule of 1/5 success to adapt the mutation parameter value  
(the initial value of the mutation parameter is considered equal to 1)
- 3) Implementation of ES( $\lambda$ ,  $\mu$ ) and ES( $\lambda+\mu$ ) for  $\lambda=10$  ,  $\mu=2$