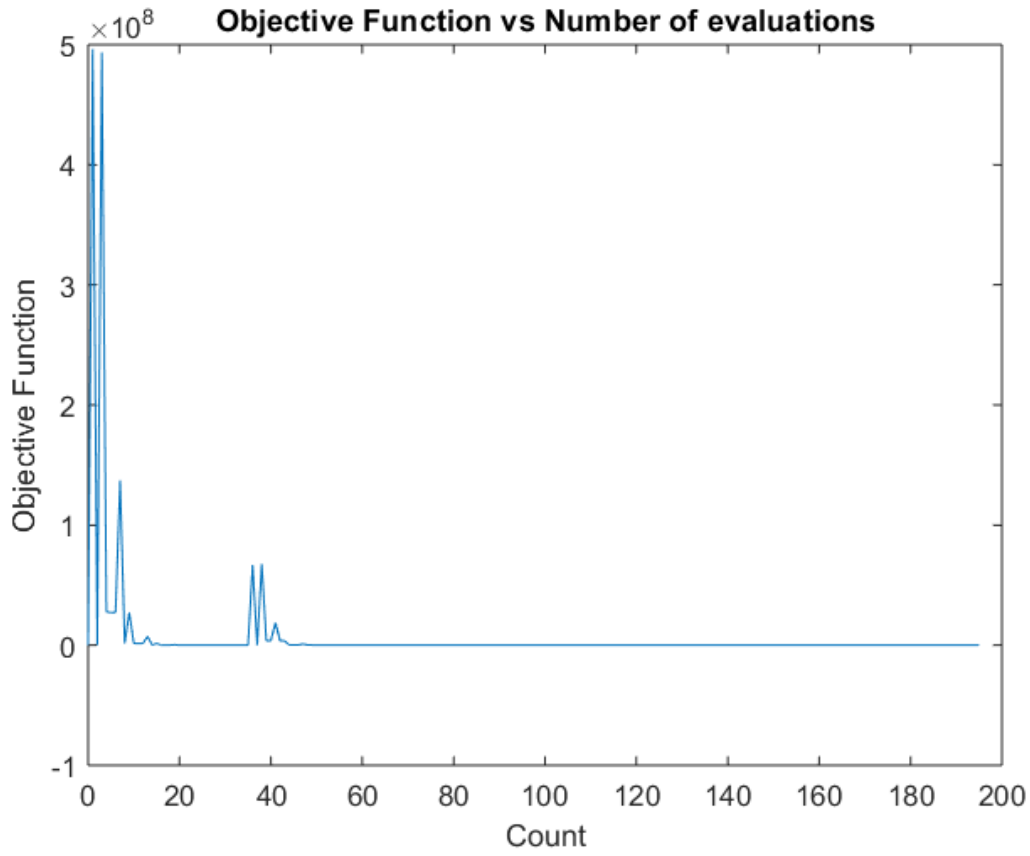
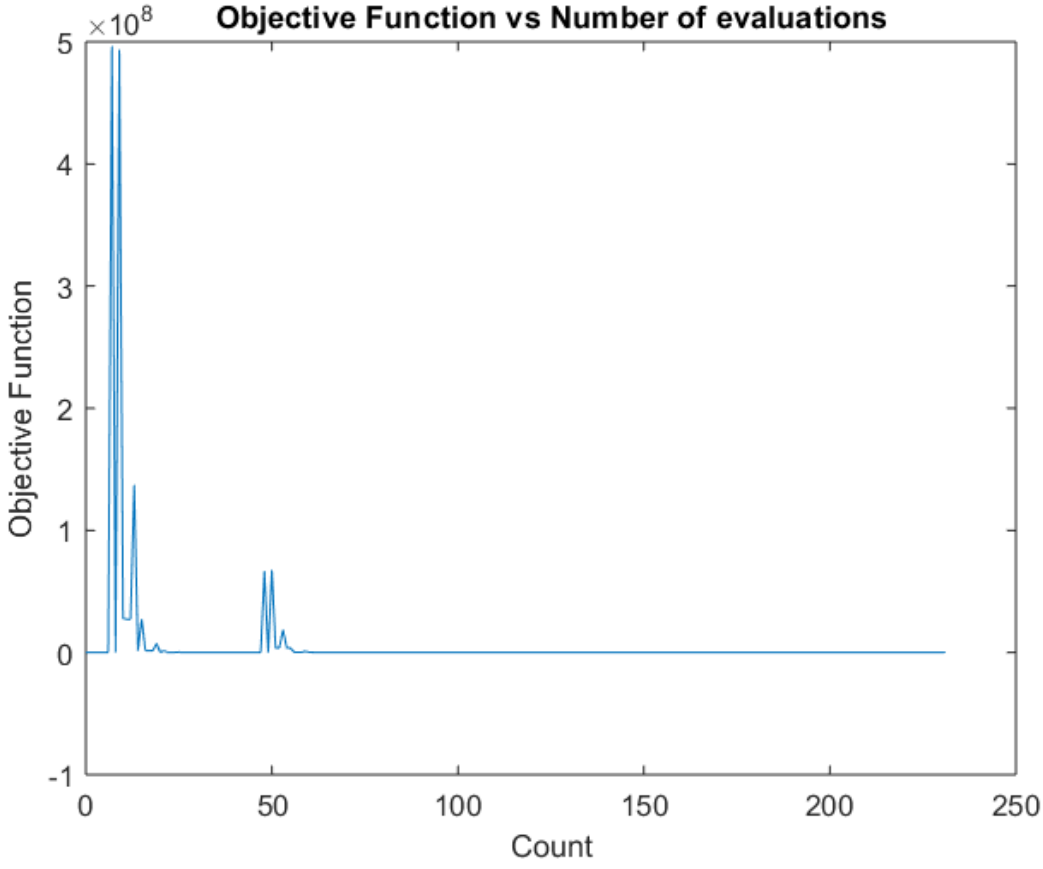
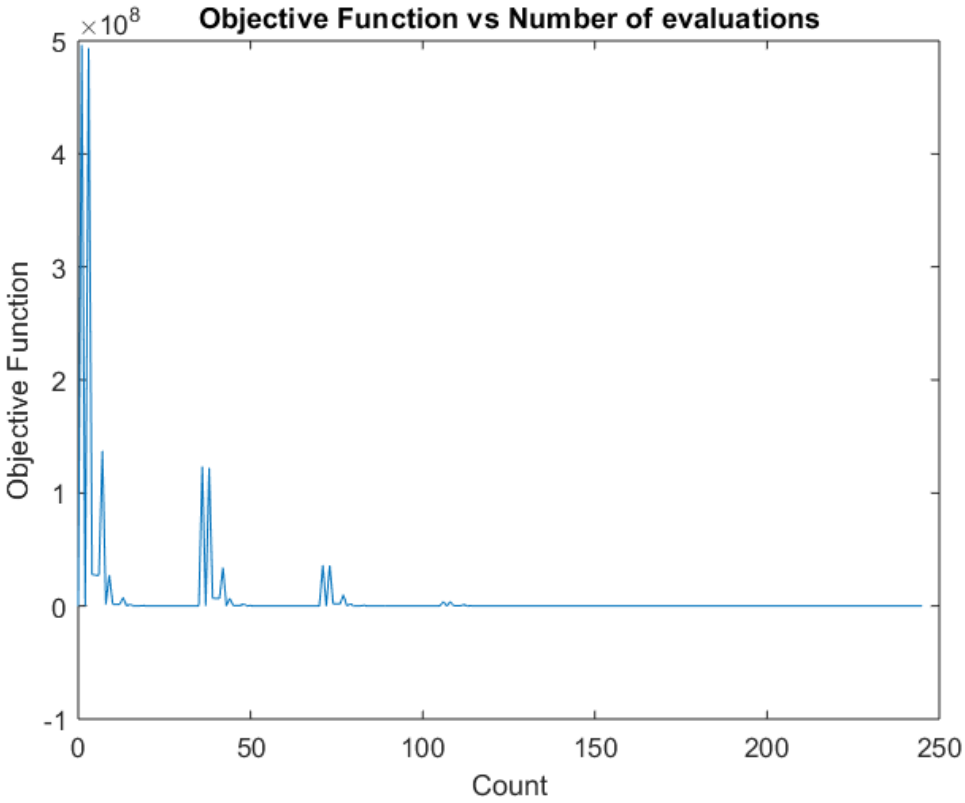
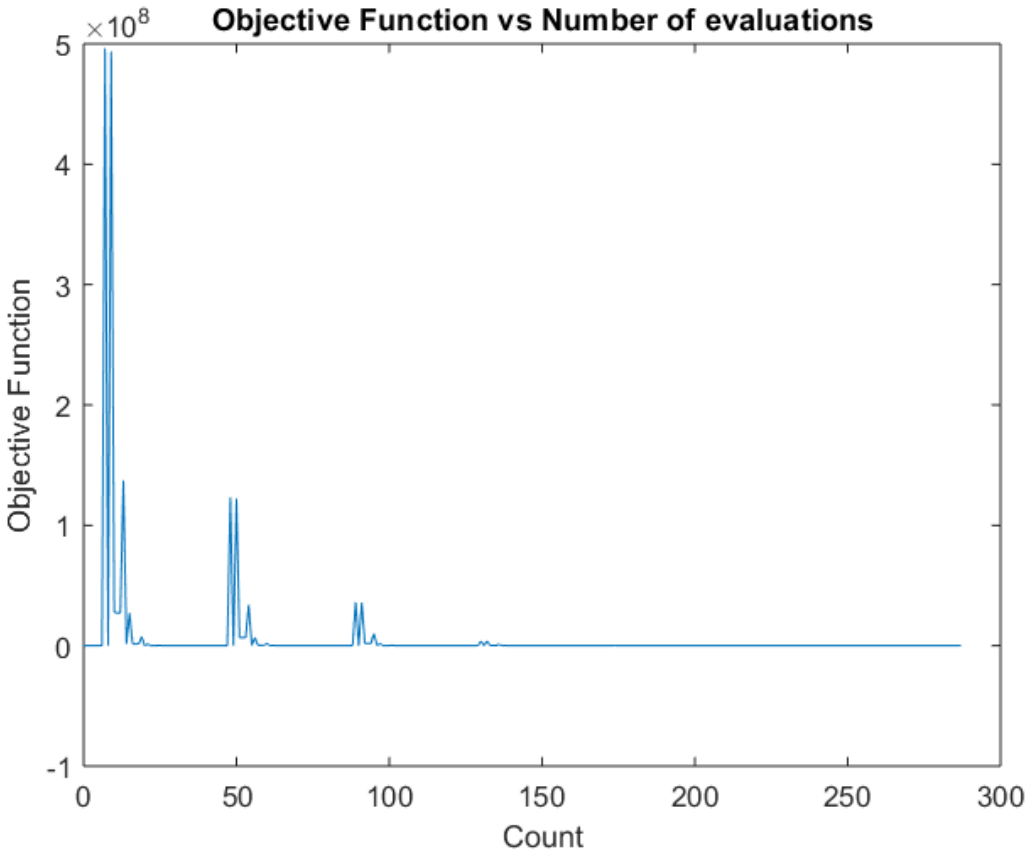
(a) BFGS using analytical derivative



(b) BFGS using central difference approach:



(c) Fletcher Reeves using Analytical Derivative :



(d) Fletcher Reeves using the central difference approach: