1) Empirical data are collected, which has unknown parameters (θ) but known Summary Statistics (S_{obs}) :

[$\theta_?$, $\theta_?$... θ_n, $S_{1\,(obs)}$, $S_{2\,(obs)}$… $S_{n\,(obs)}$]

2) Simulation data are generated, for multiple models of population histories which have known parameters (θ) and known Summary Statistics (S) :

Model 1: [θ_1, θ_2... θ_n, S_1, S_2…S_n]

Model 2: [θ_1, θ_2... θ_n, S_1, S_2… S_n]

Model 3: [θ_1, θ_2... θ_n, S_1, S_2… S_n]

⋮ ⋮

Model m: [θ_1, θ_2... θ_n, S_1, S_2…S_n]

3) Standardized Sum of Squares is used to calculate the Euclidean distance between summary statistics of empirical data and simulated data:

$$\sqrt{\sum \left[\frac{S_n - S_{n\,(obs)}}{SD\ S_n}\right]^2}$$

4) Simulated models are ranked based on Euclidean diastance. Epsilon (ε) is determined as the closest fraction (0.0005%) of models:

Model x: [θ_1, θ_2... θ_n, S_1, S_2…S_n]

Model y: [θ_1, θ_2... θ_n, S_1, S_2… S_n]

ε -

Model z: [θ_1, θ_2... θ_n, S_1, S_2… S_n]

⋮ ⋮

Model m: [θ_1, θ_2... θ_n, S_1, S_2…S_n]

5) The parameters (θ_m) of the top models are summarized into a distribution, which represents the approximate parameters of the empirical data (θ_{obs}). From this distribution, statistical estimators can generated, such as credibility intervals, and the mean median or mode to represent point estimates.