E The description of the main functions for numerical evaluation

The main function is fmbeta which implement the optimization using spg function in R.

Argument: data, bb, A, a, bg, br

- data: the data set for the analysis. the first column is the censoring indicator, the second column is the survival time, the rest of the columns are covariates

- bb: initial value of the parameters $\boldsymbol{\beta}$

- A: the R matrix in the manuscript

- a: the b matrix in the manuscript

- bg: the vector $\boldsymbol{\gamma}$ in the paper

- br: the vector $\mathbf{r}$ in the paper

Values:

- a vector of result, the first element is the vector of estimator for $\boldsymbol{\beta}$, the second element is the convergence code from spg function in R.