This file contains a description of the codes related to M-GiVSA and G-GiVSA methods provided in the current folder.

**Short Description of the files in the current folder**

1. **GiVSA.R:** This file contains the function Giva, which executes the GiVSA algorithm applied to the Modified g-prior as well as the Group-informed g-prior setup. The inputs, outputs and usage of the function Givsa are given in GiVSA.R.
2. **Output\_GiVSA.R:** This file contains the function Output\_GiVSA, which evaluates the results obtained from the function Givsa. The inputs, outputs and usage of the function Output\_GiVSA are given in Output\_GiVSA.R.
3. **Hash.CPP:** This is a helper function of Givsa and required for faster implementation of the code.
4. **input.RData** This is a RData file required for the Application.R file, and contains an example data set. It contains the following objects:
   1. **X:** The design matrix in nXp format, where n is the no. of observations, and p is the number of covariates.
   2. **y:** The n vector of responses
   3. **true\_group\_structure:** A p-length vector indicating the groups indices as numbers. For example, for p = 6, if X1, X3, X5 belong to group 1, X2, X6 belong to group 2, and X4 belong to group 3, then the true\_group\_structure would be c(1, 2, 1, 3, 1, 2).
5. **Application.R:** This file demonstrates how GiVSA methods can be applied on a given data set. In order to apply GiVSA methods on a given data set, one has to create an input.RData file containing the 3 objects X, y and true\_group\_structure (as defined above), keep the file in the current folder, and follow the steps given in Application.R.