| **Name** | **Abbreviation** | **Description** | **More information** |
| --- | --- | --- | --- |
| Importance/stratified sampling |  | Estimate the probability density of the parameters, usually uniform or Gaussian, and determine the importance of resulting outcomes in order to define regions in the parameter space. Each region is given an equal quota of randomly distributed samples. |  |
| Latin Hypercube sampling | LHS | The range of each parameter in the parameter space is partitioned into equal-probability divisions.  One sample is taken from each of the partitions, generating samples per parameter, and a sample from each set of samples is chosen for each parameter.  The process is repeated for the remaining samples until no samples remain (Norton, 2015). | (McKay et al., 1979) |
| Monte Carlo sampling | MC | A.k.a. regional SA. Generates random sample points from a probability distribution (Gan et al., 2014). | (Metropolis and Ulam, 1949) |
| Morris screening and SA method | - | A.k.a. EET. Ranks parameters by influence on output and non-linearity. Each parameter is stepped along trajectories; usually the number of trajectories is less than the number of parameters.  The starting points are random and uniformly distributed.  The parameters are perturbed once in succession along the trajectory, in random order.  The resulting sample consists of the changes in model output caused by each parameter’s perturbation (Norton, 2015). | (Morris, 1991) |
| Emulators |  | A simplified model is fit to a sample in order to give a general indication of parameter sensitivity. |  |
| One-at-a-time SA | OAT | Each parameter is perturbed from its start point. |  |
| Derivative-based LSA |  | Take partial derivatives of each input parameter with respect to the output. |  |
| Derivative-based Global Sensitivity Measure | DGSM | Sensitivity indices are computed by taking the integral over the function domain of the square of the partial derivatives of each factor with respect to the function (Sobol’ and Kucherenko, 2009). | (Sobol’ and Kucherenko, 2009) |
| Distributed Evaluation of Local Sensitivity | DELSA | A multiple starts perturbation method, similar to EET, in which squared finite differences are used as a metric of sensitivity. |  |
| Sobol’ method |  | Variance-based SA. Analyzes how the variability of a parameter or combination of parameters influences the variability of the output. Provides an indication of global behavior. |  |
| Correlation-based SA |  | The sensitivity metric is the correlation coefficient between the input parameters and output after Monte Carlo sampling. |  |
| Regression-based SA |  | The sensitivity metric is the regression coefficient between the input parameters and output after Monte Carlo sampling. |  |
| Regional SA |  | A binary split of the input parameters from a Monte Carlo sample is determined by whether or not the resulting output respective to an input sample exhibit required behaviors. A cumulative distribution function is applied to the non-/behavioral input samples as a metric of sensitivity. |  |