**Introduction**

“ *Scientific Computing or Computational Science is the collection of tools, techniques and theories required to solve on a computer the mathematical models of problems in science and engineering.*

-Gene H. Golub and James M. Ortega

In simple words, it is primarily concerned with the creation of mathematical models, the application of quantitative analysis techniques, and the use of computers to solve scientific or engineering problems.

The flow of computation for a scientific application is as follows. The first stage is to develop a mathematical model for the problem at hand. Following the development of the mathematical model, the algorithm must be developed. This algorithm is then implemented using a programming language and infrastructure that is suited for the task. The programming language to use is a critical decision that is influenced by the application's performance and processing requirements. Another important decision is to identify the framework that will be used for implementation. The algorithm is implemented and sample simulations are run after the language and framework are chosen. The performance and correctness of the simulation results are next assessed. If the implementation's outcome or performance falls short of expectations, the reasons for this should be investigated.

For Scientific Computing using Python, an open source library - **SciPy** is used.

SciPy is built on NumPy which provides array data structures and related fast numerical methods. High level libraries such as scikit-learn, scikit-image etc. are built using SciPy.

SciPy has a few sub modules which provide a number of functions and classes that can be used to solve problems .

To access all modules in SciPy package in Python, the module can be imported

*from scipy import \**