

# Flow Chart for Root Generation

MATLAB

**1 Parameters object creation** { Stores important parameters for the construction of the root model }

**2 RootStruct object creation** { Class object that represents the root structure attributes and contains the methods for the growing process }

RootStruct methods



**3 Growing process** { Axes stop growing when topological or geometrical boundary conditions are reached }



**4 Filling process** { Assigns diameters to the internodes and trims those with negative values }

**5 ScriptGenerator object creation** { Writes a python script file with a predefined body to construct the root model in Abaqus }

Abaqus

**6 Abaqus script importation** { The entire root is imported in the Assembly module together with the soil }