ABSTRACT

This project used help of the *PyCTR* module that deals with the path planning of a concentric continuum robot. A graphical user interface is made to ease the access of this simulation tool. Since the continuum robot is designed for brain surgery, an image of a human brain is used. This image is retrieved from a *DICOM* file, the `Pydicom` library is needed to access *DICOM* file into *Python*. The image of the brain is shown in four views. The first three views are the anatomical planes. These planes are the axial, sagittal and coronal planes. These images are displayed in the graphical user interface. The fourth view is to see the section where the end of the smallest diameter tube is located. This section can be seen as a plane orthogonal to the tube's end. There are a lot of possibilities where the end of the tube can be located, by this reason there are a lot of cases of how the image should be generated. Some of the cases have been solved in this project. These methods can be used and compared to solve the other possible cases to generate the image in the future work.