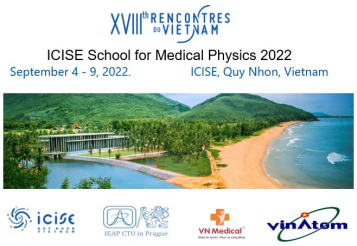

Contribution ID: **50** Type: **not specified**

Research on the construction of a phantom in dose calculation by PHITS simulation program

Wednesday 7 September 2022 16:30 (15 minutes)

In the field of medical physics, determining the dosage for organs is a very complex problem because it is impossible to directly measure the dosage inside a living person's body. Therefore, in order to estimate the dosage, one usually has to use phantoms. For dosage determination and safety assessment, Monte Carlo simulation programs and today's phantoms have become indispensable tools. There are already several standard phantoms in the world, but they do not represent biological characteristics by region or for a specific object. Another method used to build characteristic phantoms is through computed tomography (CT) images and the Hounsfield index. The method requires converting the grayscale value of each pixel element into the Hounsfield index. As such, it can only be applied to CT imaging. To overcome this shortcoming, this study has developed a program based on a new process that can convert images to geometric format for MCNP/PHITS. The new procedure that we propose will allow researchers to describe the anatomical
structures more accurately and be specific to each patient.

Presenter: ., Trần Thùy Dương

Session Classification: Student presentations - Session 3