Computational anthropomorphic models in radiological protection and medical physics

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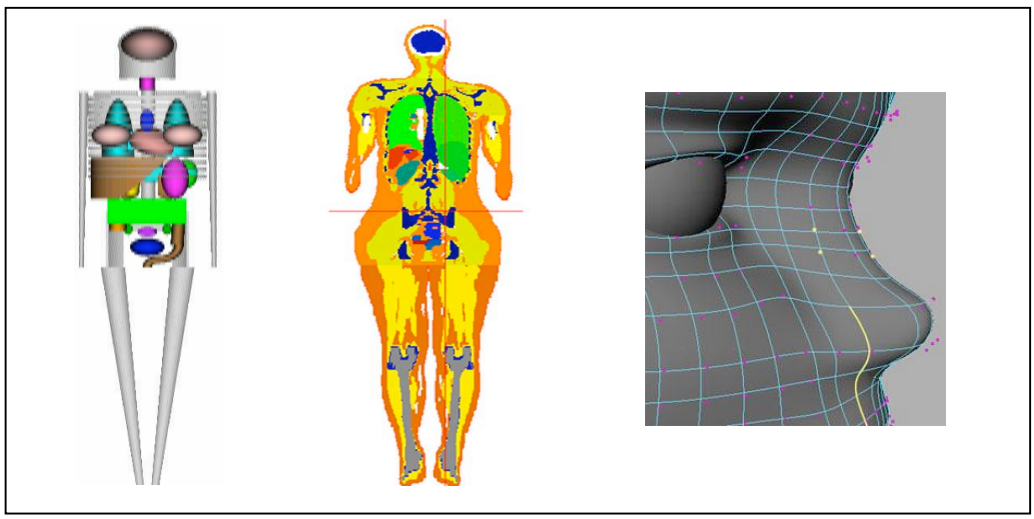
Computational models of the human body have been used for long to calculate the dose to organs in various situations, from normal exposure to radiotherapy. About 10 years ago voxel models of the human body, derived from CT scan data, have been introduced in radiological protection and more recently new 3D formats, coming from the computer graphic community, have been used by physicist.

In this seminar we will recall why Monte Carlo computation with human numerical models is necessary.
We will then present the different graphic formats used in Monte-Carlo codes and discuss their advantage and limitations.
To conclude several applications will be presented, mostly in radiological protection and medical physics, but not only.

This seminar is mostly intended for Master students but also for researchers who are not familiar with the topic.



Examples of computational models used in Monte-Carlo codes.