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Nuclear Physics applied to the production of Innovative Radio-Pharmaceuticals

Monday, 22 July 2019 16:00 (1h 30m)

The lecture introduces the basic concepts related to radionuclide production at cyclotrons for radiopharmaceuticals application. The main goal is to find efficient production routes of novel radiopharmaceuticals (theranostics, multi-modal imaging, etc), with special considerations about purity and yields. There will be a discussion on the different reaction mechanisms (and the underlying theory) that are important for the production cross sections in the available energy regime. A survey of the most commonly used nuclear reaction codes for simulations and prediction of cross sections will be given. In the tutorial a set of exercises will illustrate how to calculate the activities and yields of the produced radionuclides as well as the various purities necessary for these applications.

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