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P1.77: First simulations of Open-IMAGING PET

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This work presents the first simulations performed in the context of Open-IMAGING project (ERC-2022-POC1 Grant agreement ID: 101069298) which consists in the development of two PET detector paddle modules. In this project, one detector module will be composed by a 4x4 array of Broadcom SiPM 4x4mm2 each, coupled to an 8x8 scintillator array of 2x2x12mm3 LYSO crystals, separated with ESR and having the top and bottom surfaces polished to increase the light collection. Four of these modules will conform a so-called supermodule. The final paddle will be formed by 4x4 supermodules with a total detector area of 256x256mm2. The results of the simulations show that at 300 mm distance between paddles, 180ps TOF resolution is suitable for organ exploration as brain or cardiac applications.

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