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## **Modulation of FEL electron beam in the field of external laser radiation**

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This report describes research work on studying and testing the enhanced harmonic generation at FEL machines by external amplified signal of high harmonics generated in a gas to be applied to the SPARC accelerated electron beam. The aim is to investigate how the presence of the reinforcing laser radiation affects the motion of electrons and its characteristics. The task of this work is to optimize the external laser beam characteristics with regard to the characteristics of accelerated electron beam for generating the resulted radiation in X-ray range of the spectrum.

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